TRAFFIC STUDY

For

West Lilac Residential Subdivision
(TM 5276)

in the County of San Diego

Submitted To:

West Lilac Farms, LLC

Submitted By:

Darnell & Associates, Inc.

Revised October 19, 2005
Revised May 11, 2005
Original January 11, 2005

Darnell & ASSOCIATES, INC.
TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

October 19, 2005

Jim Pardee
West Lilac Farms, LLC
2419 Swanfield Court
Thousand Oaks, CA 91361

D&A Ref. No.: 030411

Subject: Traffic Impact Analysis for the Proposed West Lilac Residential Subdivision (TM 5276) Located south of West Lilac Road between Via Ararat Drive and Aqueduct Road in the Bonsall Community of the County of San Diego.

Dear Mr. Pardee:

In response to the County of San Diego comments dated October 5, 2005, Darnell & Associates, Inc. (D&A) has revised our May 11, 2005 traffic study for the subject project. Per the County's request, this iteration of the report addresses the design exception request that has been submitted for Via Ararat Drive. This iteration of the report also provides an updated assessment of the sight distance at the West Lilac Road/Via Ararat Drive intersection. (A copy of our written responses to each of the County's comments is provided in Appendix E.)

If you have any questions, please feel free to contact the office.

Sincerely,

DARNELL & ASSOCIATES, INC.

Vicki S Haskell

Vicki S. Haskell, P.E.
Senior Transportation Engineer
RCE 63754

Date Signed: 10-19-05

BED/vsh
030411--West Lilac TM 5276-Rpt3-10-19-05/10-05

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TRAFFIC STUDY

FOR

WEST LILAC RESIDENTIAL SUBDIVISION
(TM 5276)

COUNTY OF SAN DIEGO

Submitted To:

WEST LILAC FARMS, LLC
2419 SWANFIELD COURT
THOUSAND OAKS, CA 91361

Submitted By:

Darnell & Associates, Inc.
1446 Front Street, Third Floor
San Diego, CA 92101
619-233-9373

October 19, 2005
030411--West Lilac TM 5276-Rpt3-10-19-05/10-05

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EXECUTIVE SUMMARY

The developer proposes to construct a twenty-eight (28) lot single-family estate residential subdivision south of West Lilac Road between Via Ararat Drive and Aqueduct Road in the Bonsall Community of San Diego County. As this report will show, the proposed project is estimated to generate 336 average daily trips, 27 AM peak hour trips, and 34 PM peak hour trips.

This report will also show that the proposed project does not have any significant direct roadway or intersection impacts.

The proposed project, will however, be part of significant cumulative impacts to the roadway segments and intersections. To mitigate the project's cumulative impacts, the developer will pay the Traffic Impact Fees as discussed in Section VI.

As part of the development of the project, the developer proposes to widen Aqueduct Road to 24 feet of pavement on 28 feet of graded width. The proposed improvements will bring the cross-section of Aqueduct Road up to the County's Private Road Standards.

The developer also proposes to widen Via Ararat Drive to provide 22.5 feet of pavement. It should be noted that the County's Private Road Standards require 24 feet of pavement, thus even with the proposed improvements the cross-section of Via Ararat Drive will not comply with County standards. Therefore, the applicant has submitted a design exception request to the County for their review and consideration See Section V for more details on the proposed improvements to Via Ararat Drive.

SECTION I – INTRODUCTION

PROJECT DESCRIPTION

The developer proposes to construct a twenty-eight (28) lot single-family estate residential subdivision south of West Lilac Road between Via Ararat Drive and Aqueduct Road in the Bonsall Community of San Diego County. As currently designed, the project site will be divided into two sections. The northern section of the project consists of 17 dwelling units with the primary access being provided via one access point, Street "A", on Aqueduct Road. The southern section of the project consists of 11 dwelling units with the primary access being provided via one access point, Street "D", on Via Ararat Drive. Street "A" will extend from Aqueduct Road southwesterly to connect the two sections of the project. A vicinity map showing the proposed project is provided on Figure 1 and the proposed site plan is illustrated in Figure 2.

CONGESTION MANAGEMENT PROGRAM

Based on the approval of Proposition 111 in 1990, regulations require the preparation, implementation and annual updating of a Congestion Management Program (CMP) in each of California's urbanized counties. In 1991, San Diego County adopted their initial CMP statutes. One required element of the CMP is a process to evaluate the transportation and traffic impacts of large projects on the regional transportation system. That process is undertaken by local agencies, project applicants and traffic consultants through a transportation impact report usually conducted as part of the CEQA project review process. Authority for local land use decisions including project approvals and any required mitigation remains the responsibility of local jurisdictions.

The criteria for which a project is subject to the regulations as set forth in the CMP are determined by the trip generation potential for the project. Currently, the threshold is 2,400 average daily trips (ADT) or 200 peak hour trips. The proposed project will generate 336 average daily trips, 27 AM peak hour trips, and 34 PM peak hour trips (see Section III), and is therefore, not subject to CMP guidelines for traffic impact studies.

SCENARIOS STUDIED

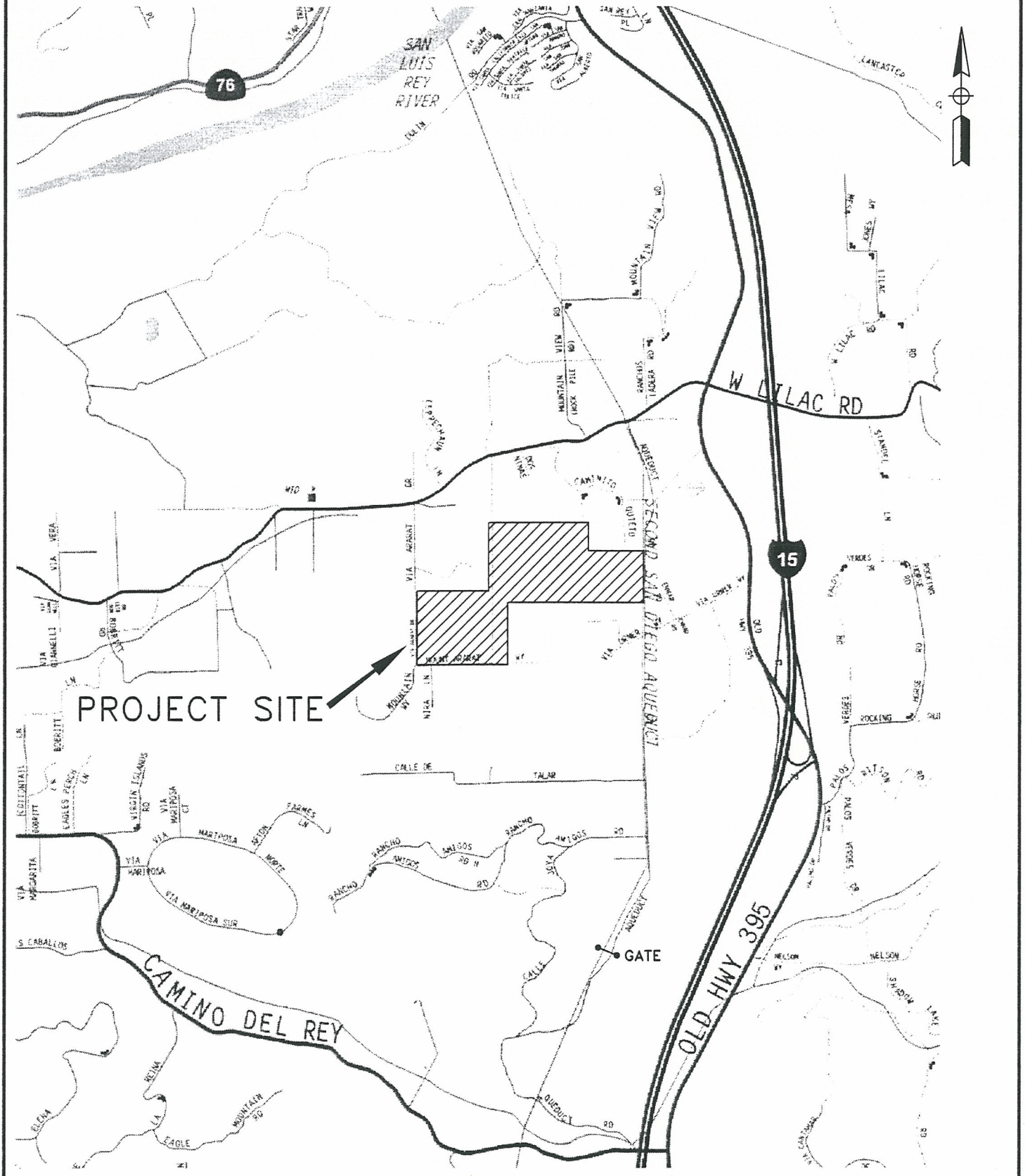
The traffic scenarios analyzed in this report are identified as follows:

Existing Conditions refers to that condition which exists on the ground today, including existing traffic and existing lane configurations at intersections and roadway segments.

Existing Plus Project Conditions refers to that condition which includes the project traffic added onto existing volumes.

LEVEL OF SERVICE

Level of Service (LOS) is a professional industry standard by which the operating conditions of a given roadway segment or intersection are measured. Level of Service is defined on a scale of A to F; where LOS A represents the best operating conditions and LOS F represents the worst operating conditions. LOS A facilities are characterized as having free flowing traffic conditions with no restrictions on maneuvering or operating speeds; traffic volumes are low and travel speeds are high. LOS F facilities are characterized as having forced flow with many stoppages and low operating speeds. Table 1 shows the average daily traffic volumes (ADT), average travel speeds, and delay ranges that are equivalent to each level of service.



Darnell & ASSOCIATES, INC. 030411DD.dwg 5-10-05 TMC	FIGURE 1 VICINITY MAP

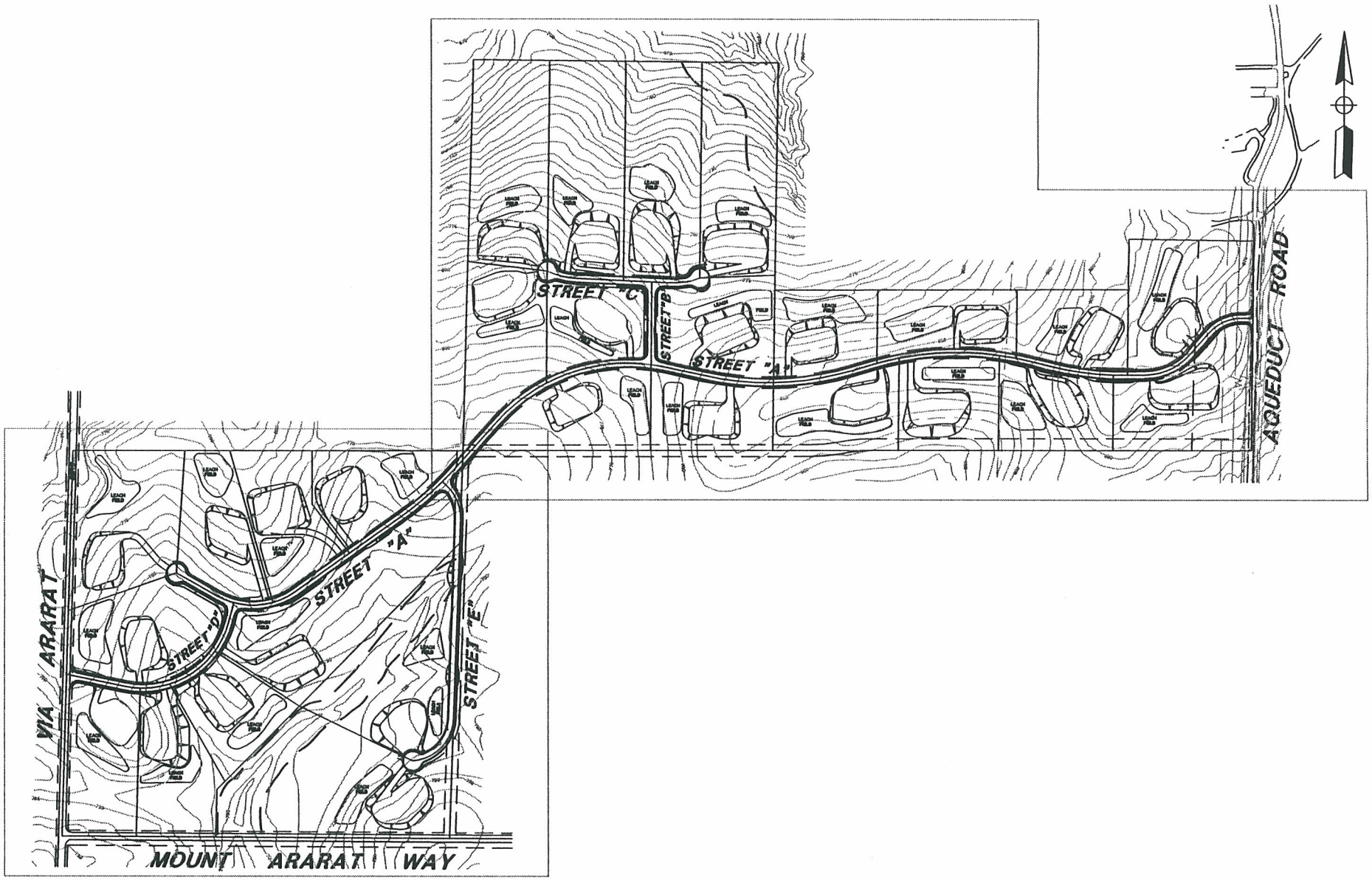


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FIGURE 2

SITE PLAN

Table 1 - Level of Service Ranges			
LOS	Intersections		Roadway Segments
	Signalized- Delay (Seconds/Vehicle)[1]	Unsignalized Delay (Seconds/Vehicle)[1]	Average Daily Traffic (ADT)[2]
A	Less than or Equal to 10.0	Less than or Equal to 10.0	Less Than 1,900
B	10.1 to 20.0	10.1 to 15.0	1,900 to 4,100
C	20.1 to 35.0	15.1 to 25.0	4,100 to 7,100
D	35.1 to 55.0	25.1 to 35.0	7,100 to 10,900
E	55.1 to 80.0	35.1 to 50.0	10,900 to 16,200
F	Greater Than 80.0	Greater Than 50.1	Greater Than 16,200

[1] The delay ranges shown are based on the 2000 Highway Capacity Manual (HCM)
[2] The volume ranges are based on the County of San Diego Circulation Element of a Light Collector, the average daily volume ranges for the other roadway classifications has been provided in Appendix A.
LOS = Level of Service; mph = miles per hour

According to page XII-4-15 of the San Diego County General Plan *Public Facility Element* "A LOS 'C', which allows for stable traffic flow with room to maneuver, is a generally accepted level to strive for in new development. ... However, there are some cases where development cannot achieve a LOS "C" on off-site roadways. For instance, there are areas where the existing development pattern precludes the addition of lanes or other mitigation or when the community is opposed to certain improvements to maintain a LOS 'C'. ... In these cases a Level of Service 'D' is acceptable on off-site roadways." A copy of excerpts from the County's *Public Facility Element* can be found in Appendix A

ANALYSIS METHODOLOGY

The roadway segment daily LOS was determined by comparing the traffic volumes under each traffic scenario to the capacity of the roadway according to its roadway cross-section and classification. For the purpose of this report, the daily traffic volumes of the roadway segments in the vicinity of the project were compared to the County of San Diego Level of Service classification thresholds. The daily (24 hour) traffic count sheets and a copy of the "Summary of County of San Diego Public Road Standards" are included in Appendix A.

The Synchro Software, version 6.0, was utilized to analyze the morning and afternoon peak hour conditions of the intersections in the project vicinity. It should be noted that Synchro, version 6.0, is based on the methodologies outlined in the 2000 Highway Capacity Manual (HCM). The signalized intersection methodology defines LOS based on delay using variables such as lane configuration, traffic volumes and signal timings. The unsignalized intersection methodology defines LOS based on the longest delay experienced by any single movement.

REPORT ORGANIZATION

Following this section, Section II evaluates the existing roadway characteristics and traffic conditions surrounding the project area. Section III examines the project trip generation and distribution assumptions. Section IV analyzes the traffic for existing plus project conditions and provides a brief discussion on the potential cumulative impacts. Section V addresses project access and on-site circulation. Section VI provides recommended mitigation measures and Section VII summarizes the report's findings and conclusions.

SECTION II - EXISTING CONDITIONS

This section of the traffic study is intended to assess the existing conditions of the roadways and intersections within the vicinity of the project to determine travel flow and/or delay difficulties, if any, that exist prior to adding the traffic generated by the proposed project. The existing conditions analysis establishes a base condition which is used to assess the other scenarios discussed in this report.

Darnell & Associates, Inc. (D&A) conducted a field review of the area surrounding the project in November 2004. The existing roadway geometrics are illustrated in Figure 3.

EXISTING ROADWAY CHARACTERISTICS

The key segments analyzed in the study area are identified below:

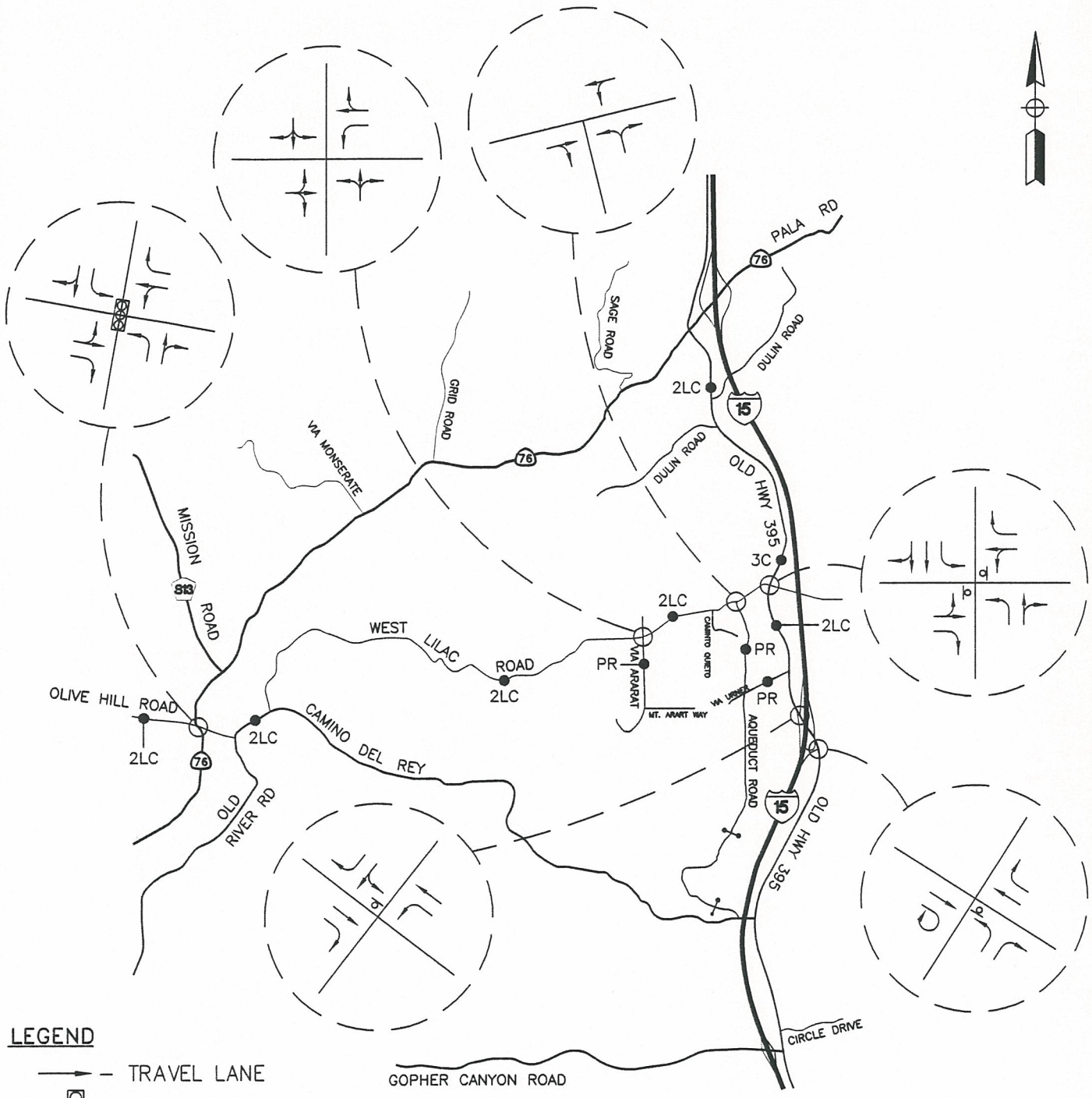
Camino Del Rey (SA 100) is an east-west two-lane undivided circulation element roadway with a posted speed limit of 45 mph. The existing cross-section of Camino Del Rey is equivalent to that of a Light Collector Road, capacity of 10,900 ADT at LOS D. In the County of San Diego Circulation Element, Camino Del Rey between State Route 76 and West Lilac Road has the ultimate classification of a four-lane Collector Road, capacity of 30,800 ADT at LOS D. Between West Lilac Road and Old Highway 395, Camino Del Rey has the ultimate circulation element classification of a four-lane Major Road with bike lanes, capacity of 33,400 ADT at LOS D.

West Lilac Road (SC 270.2) is an east-west two-lane undivided circulation element roadway with little to no shoulder. The posted speed limit on West Lilac Road between Via Ararat and Old Highway 395 is 45 mph. The existing cross-section of West Lilac Road is equivalent to that of a Light Collector Road, capacity of 10,900 ADT at LOS D. In the County of San Diego Circulation Element, West Lilac Road has the ultimate classification of a Light Collector Road with bike lanes.

Old Highway 395 is generally constructed as a north-south two-lane undivided circulation element roadway. The section of Old Highway 395 just north of West Lilac Road provides an additional southbound truck climbing lane. The posted speed limit on Old Highway 395 from State Route 76 (Pala Road) to Via Urner Way is 45 miles per hour (mph). The existing cross-section of Old Highway 395 is equivalent to that of a Light Collector Road, capacity of 10,900 ADT at LOS D. In the County of San Diego Circulation Element, Old Highway 395 has the ultimate classification of a four (4)-lane Collector Road with bike lanes, capacity of 30,800 ADT at LOS D.

Via Ararat Drive is a north-south two-lane undivided private road with no center line stripe. Currently Via Ararat Drive is approximately twenty (20) feet wide which does not meet the County's Private Road Standards. As part of the project development, however, the developer proposes to widen Via Ararat Drive to 22.5 feet of pavement. Even with the proposed improvements, the cross-section of Via Ararat Drive will not comply with County standards. Therefore, the applicant has submitted a design exception request to the County for their review and consideration. (See Section V for more details on the proposed improvements to Via Ararat Drive.) Via Ararat Drive has an estimated maximum capacity of 2,500 ADT at LOS C.

Aqueduct Road is a north-south two-lane undivided private road with no center line stripe. Currently Aqueduct Road is approximately twenty (20) feet wide which does not meet the County's Private Road Standards. As part of the project development, however, the developer proposes to widen Via Ararat Drive to 24 feet of pavement on 28 feet of graded width. The proposed improvements will bring the cross-section of Aqueduct Road up to the County's Private Road Standards. Aqueduct Road has an estimated maximum capacity of 2,500 ADT at LOS C.



LEGEND

- TRAVEL LANE
- TRAFFIC SIGNAL
- STOP SIGN
- 2LC – TWO LANE LIGHT COLLECTOR
- 3C – COLLECTOR ROAD WITH 2 SOUTHBOUND LANES AND 1 NORTHBOUND LANE
- PR – PRIVATE ROAD
- GATE

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FIGURE 3

EXISTING CONDITIONS

Via Urner Way is an east-west two-lane undivided non-circulation element private road with no center-line stripe and a posted speed limit of 25 mph. Via Urner Way has an estimated maximum capacity of 2,500 ADT at LOS C.

ROADWAY SEGMENT DAILY TRAFFIC

Twenty-four (24) hour traffic counts were collected on Old Highway 395 and West Lilac Road on Wednesday, September 8, 2004. Twenty-four (24) hour traffic counts for Camino Del Rey, Via Ararat Drive, Aqueduct Road, and Via Urner Way were collected on Thursday, January 6, 2005. Figure 4 presents the existing conditions traffic volumes used in this analysis. Count summaries are included in Appendix A.

KEY INTERSECTIONS

Figure 3 provides intersection configurations and traffic control for the key intersections. The key intersections analyzed in the study area are identified below:

- State Route 76 (Mission Road)/Olive Hill Road-Camino Del Rey (signalized);
- West Lilac Road/Via Ararat Drive (uncontrolled);
- West Lilac Road/Aqueduct Road (uncontrolled);
- West Lilac Road/Old Highway 395 (two-way stop-controlled);
- Old Highway 395/Interstate 15 Southbound Ramps (one-way stop-controlled); and
- Old Highway 395/Interstate 15 Northbound Ramps (one-way stop-controlled).

INTERSECTION TRAFFIC COUNTS

Morning and afternoon peak hour turn counts for SR-76/Olive Hill Road-Camino Del Rey; West Lilac Road/Via Ararat Drive; and West Lilac Road/Aqueduct Road were collected in January 2005. AM and PM peak hour turn counts for West Lilac Road/Old Highway 395 and Old Highway 395/Interstate 15 Southbound and Northbound ramps were collected in September 2004. Figure 4 presents the existing conditions traffic volumes used in this analysis. Count summaries are included in Appendix A.

EXISTING LEVEL OF SERVICE CONDITIONS

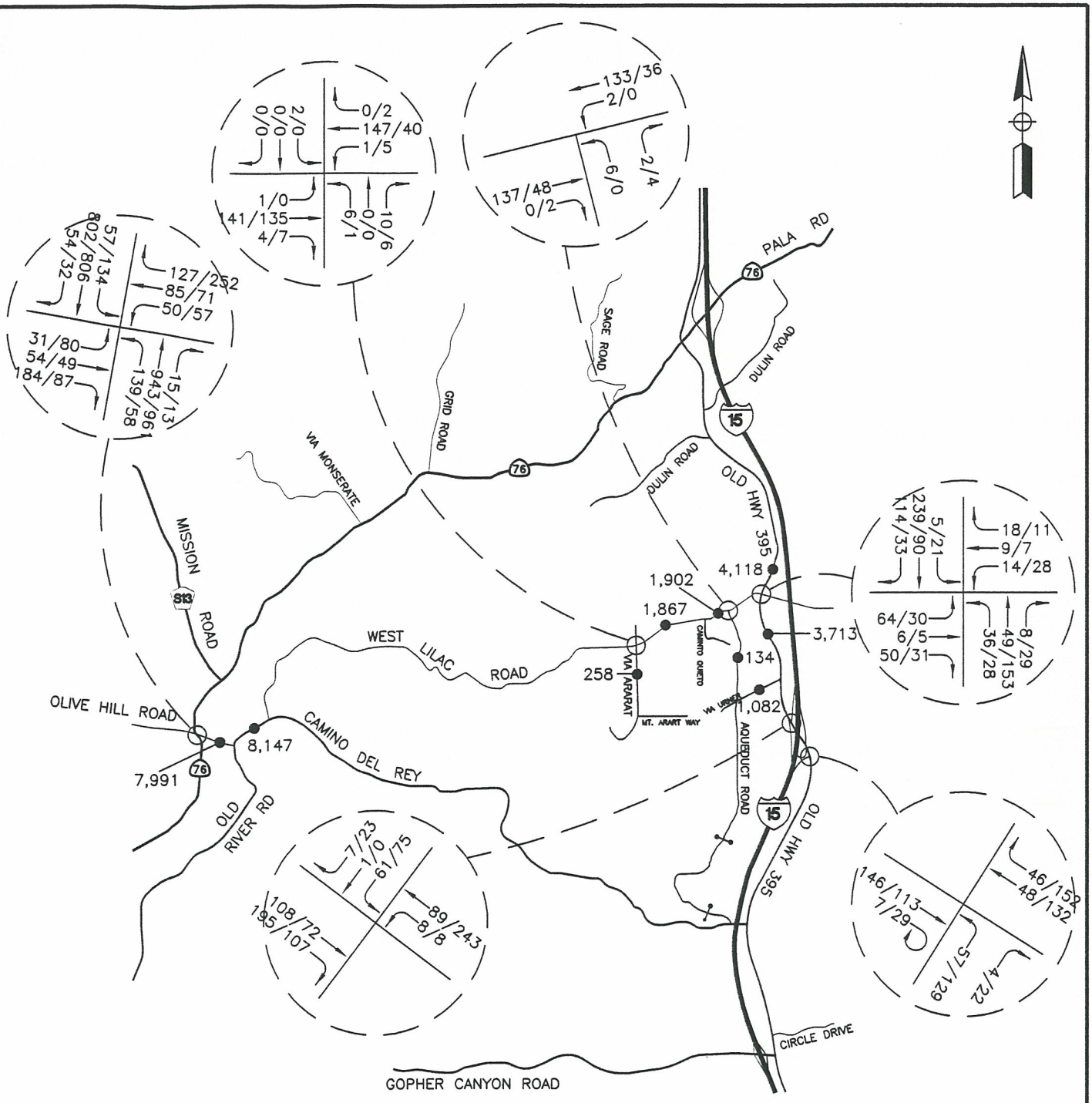
Roadway Segments

The existing daily roadway segment levels of service are summarized in Table 2. As can be seen in Table 2, all roadway segments analyzed currently operate at LOS D or better.

Intersections

The existing conditions Levels of Service for the key intersections were calculated utilizing the lane geometrics shown in Figure 3. The results of the Synchro analysis are summarized in Table 3. A copy of the Synchro worksheets for existing conditions can be found in Appendix B.

As can be seen from Table 3, with the exception of the SR-76 (Mission Road)/Olive Hill Road-Camino Del Rey intersection, all intersections analyzed currently operate at LOS C or better during both the AM and PM peak hours. The SR-76 (Mission Road)/Olive Hill Road-Camino Del Rey intersection currently operates at LOS E during the AM peak hour and LOS D during the PM peak hour.



LEGEND

XX/YY – AM/PM PEAK HOUR TURN VOLUMES

● Z,ZZZ – AVERAGE DAILY TRAFFIC

→ – DIRECTION OF TRAVEL

●—● – GATE

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FIGURE 4

EXISTING TRAFFIC VOLUMES

Table 2 - Existing Roadway Segment Level of Service Summary				
Roadway Segment	Classification	Capacity @ LOS D	ADT	LOS
Camino Del Rey				
-SR-76 to Old River Rd	Light Collector	10,900	7,991	D
-Old River Rd to West Lilac Rd	Light Collector	10,900	8,147	D
West Lilac Road				
-Camino Del Rey to Via Ararat Dr	Light Collector	10,900	1,867	A
-Via Ararat Dr to Caminito Quieto	Light Collector	10,900	1,867	A
-Caminito Quieto to Aqueduct Rd	Light Collector	10,900	1,902	B
-Aqueduct Rd to Old Highway 395	Light Collector	10,900	1,902	B
Old Highway 395				
-Dulin Road to West Lilac Road	Light Collector	10,900	4,118	C
-West Lilac Road to Via Urner Wy	Light Collector	10,900	3,713	B
Via Ararat Drive (a)				
-West Lilac Rd to Mt. Ararat Wy	Private Road	2,500	258	< C
Aqueduct Road (a)				
-West Lilac Rd to Via Urner Wy	Private Road	2,500	134	< C
Via Urner Way (a)				
-Aqueduct Rd to Old Hwy 395	Private Road	2,500	1,082	< C

(a) Levels of Service are not typically applied to non-circulation element roadways. The capacity shown here is the recommended capacity for LOS C. < C = Operates at better than LOS C.
Capacity is based on upper limit of LOS D per the County of San Diego Level of Service Thresholds
ADT = Average Daily Traffic; LOS = Level of Service

Table 3 - Existing Intersection Level of Service Summary					
Intersection	Critical Movement	AM Peak Hour		PM Peak Hour	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
SR-76 (Mission Rd) @ Olive Hill Rd - Camino Del Rey (Signalized)	Intersection	**55.0**	**E**	41.3	D
West Lilac Road @ Via Ararat Drive	WBL	7.8	A	7.3	A
	NB Approach	11.5	B	8.6	A
	SB Approach	14.0	B	-	-
West Lilac Road @ Aqueduct Road	WB Approach	0.1	A	-	-
	NB Approach	11.6	B	8.6	A
West Lilac Road @ Old Highway 395 (TWSC)	EBL-T	20.2	C	13.9	B
	WBL-T	14.5	B	13.3	B
	NBL	8.6	A	7.6	A
	SBL	7.4	A	7.8	A
Old Highway 395 @ I-15 Southbound Ramps (OWSC)	WBL	8.0	A	7.6	A
	SBL-T	10.7	B	11.9	B
	SBR	8.8	A	9.8	A
Old Highway 395 @ I-15 Northbound Ramps (OWSC)	NBL	10.4	B	11.5	B
	NBR	9.1	A	9.0	A

sec/veh = seconds of delay per vehicle; LOS = Level of Service;
TWSC = Two-Way Stop-Controlled; OWSC = One-Way Stop-Controlled;
EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound;
EBL-T = Eastbound Left-Through; WBL = Westbound Left; WBL-T = Westbound Left-Through;
NBL = Northbound Left; NBR = Northbound Right;
SBL = Southbound Left; SBL-T = Southbound Left-Through Lane; SBR = Southbound Right

SECTION III - PROJECT RELATED CONDITIONS

TRIP GENERATION

Trip generation to/from the proposed development was calculated based on the trip generation rates published by the San Diego Association of Governments' (SANDAG) *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002. Table 4 summarizes the trip generation rates and calculations for the proposed project.

As shown in Table 4, the proposed project is estimated to generate 336 average daily trips, 27 AM peak hour trips, and 34 PM peak hour trips.

Table 4 - Trip Generation Rates and Calculations Summary

Trip Generation Rates

Land Use	Daily	AM Peak Hour			PM Peak Hour		
		Total - % of Daily	% In	% Out	Total - % of Daily	% In	% Out
Estate Residential	12 Trips/DU	8%	30%	70%	10%	70%	30%

Trip Generation

Land Use	Total No. of Units	Daily	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Estate Residential	28 DUs	336	27	8	19	34	24	10

Trip Generation Rates are based on SANDAG's *(Not So) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region*, April 2002

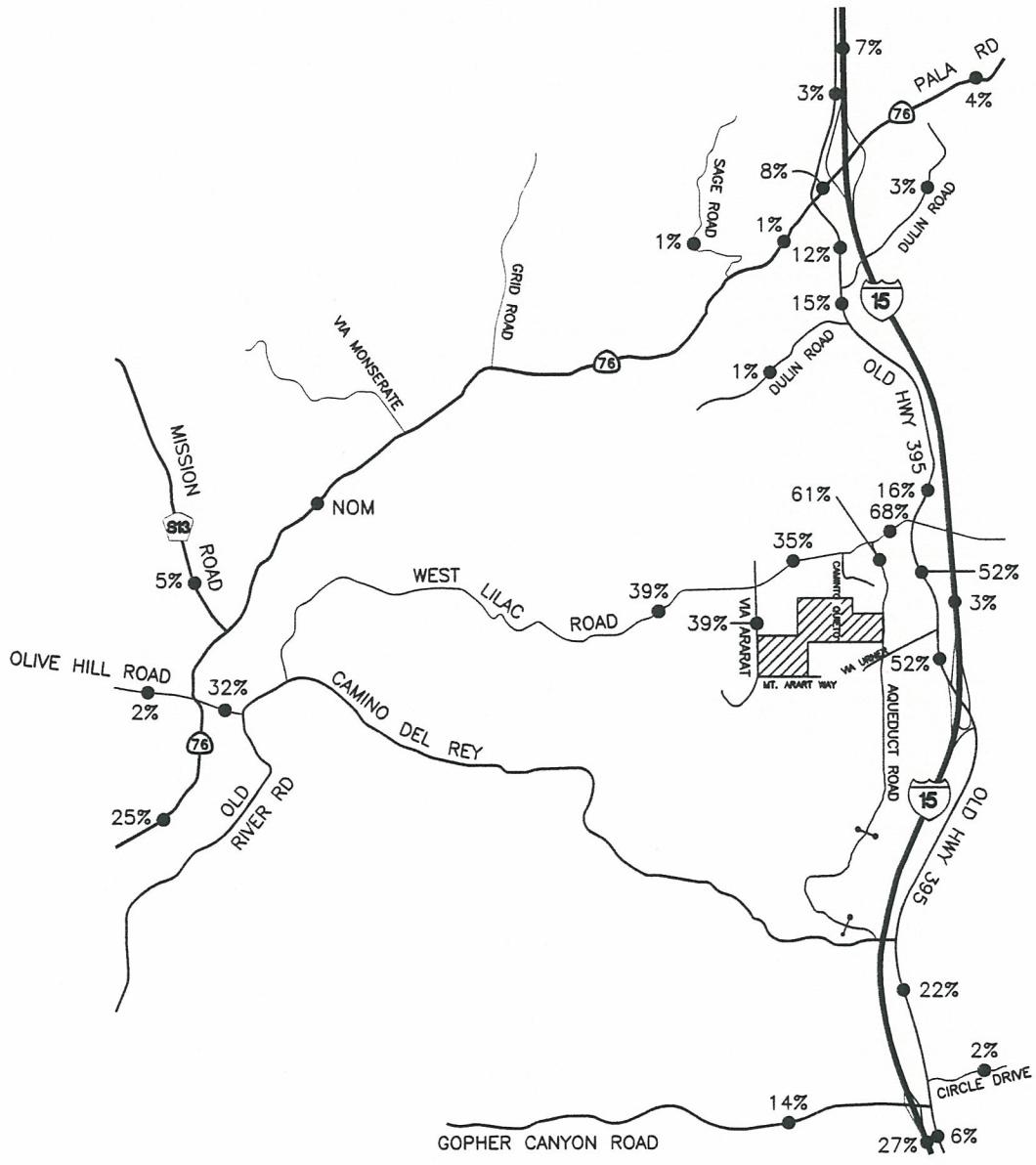
TRIP DISTRIBUTION/TRIP ASSIGNMENT

The general trip distribution to/from the project site was based on the SANDAG 2005 Select Zone forecast. While the trip distribution for specific routes were based on field investigation of the existing roadway conditions.

Field investigations found that Aqueduct Road is gated south of the project site; therefore, project traffic would not be able to utilize this route. The SANDAG Select Zone forecast, however, assigned four percent (4%) of the project traffic south on Aqueduct Road to Camino Del Rey and then west on Camino Del Rey. Since Aqueduct Road is gated to the south of the project, D&A redistributed this traffic to travel north on Aqueduct Road to West Lilac Road at which point it would continue west.

Concerns have been raised about the project traffic utilizing the private road Via Urner Way located south of the project's access on Aqueduct Road as a cut-through route to get to Old Highway 395. Although it is unlikely that residents of the proposed project would actually utilize Via Urner Way, the developer has agreed to install a Left Turn only sign at the project's access (Street "A") exiting onto Aqueduct Road. The Left Turn only signage will direct the project's traffic to travel north on Aqueduct Road and away from Via Urner Way.

Figure 5 illustrates the trip distribution percentages on the existing roadway network and Figure 6 illustrates the project related traffic volumes. The impacts associated with the addition of project traffic are discussed in the following section, Section IV.



LEGEND

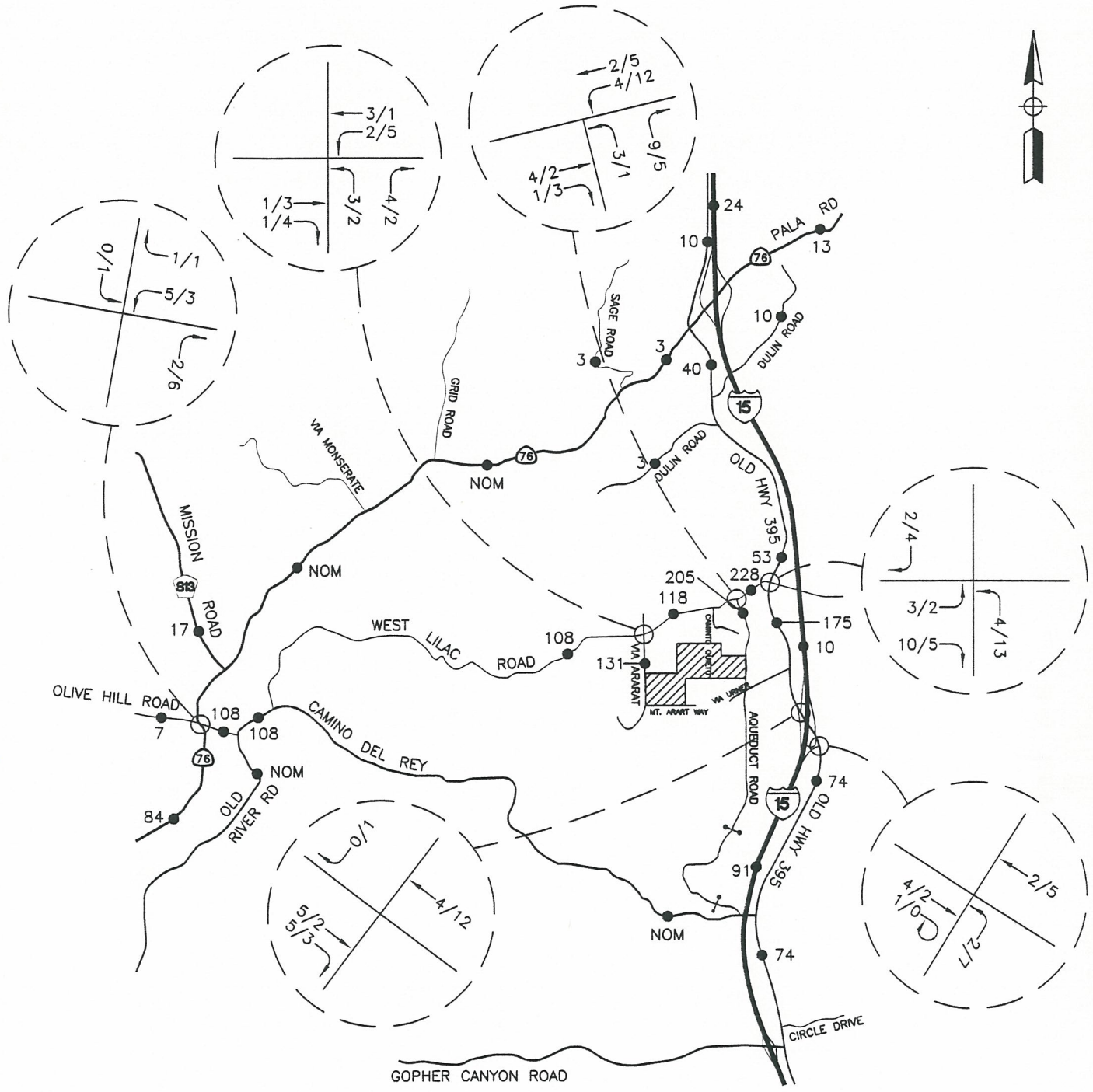
● XX% – DISTRIBUTION PERCENTAGE

▨ – PROJECT SITE

●—● – GATE

NOM – NOMINAL

Darnell & ASSOCIATES, INC. 030411DD.dwg 5-10-05 TMC	FIGURE 5 TRIP DISTRIBUTION



LEGEND

XX/YY – AM/PM PEAK HOUR TURN VOLUMES

● Z,ZZZ – AVERAGE DAILY TRAFFIC

→ – DIRECTION OF TRAVEL

▨ – PROJECT SITE

●—● – GATE

NOM – NOMINAL

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FIGURE 6

PROJECT RELATED TRAFFIC VOLUMES

SECTION IV – IMPACTS

PUBLIC FACILITIES ELEMENT IN COUNTY

According to page XII-4-18 of the *Public Facility Element* for San Diego County, a discretionary project which has a significant impact on roadways will be required, as a condition of approval, to make "improvements or other measures necessary to mitigate traffic impacts to avoid reduction in the existing Level of Service below 'D' on off-site and on-site abutting Circulation Element roads. New development that would significantly impact congestion on roads at LOS 'E' or 'F', either currently or as a result of the project, will be denied unless improvements are scheduled to increase the LOS to 'D' or better or appropriate mitigation is provided. Appropriate mitigation would include a fair share contribution in the form of road improvements or a fair share contribution to an established program or project. If impacts cannot be mitigated, the project will be denied unless a specific statement of overriding findings is made pursuant to Section 15091(b) and 15093 of the State CEQA Guidelines."

The *Public Facility Element* for the County of San Diego also requires that all on-site Circulation Element roads operate at Level of Service C or better. If the Level of Service at an on-site Circulation Element road is reduced below LOS C, the proposed project must provide appropriate mitigation measures. A copy of excerpts from the County's *Public Facility Element* can be found in Appendix A.

LEVELS OF SIGNIFICANCE STANDARDS

The County has not officially adopted a methodology for determining the threshold of significance on roadway segments and intersections. However, the County has recently released their *Guidelines for Determining Significance*. A summary of the County's Guidelines is provided in Table 5. Copies of excerpts from the County's Guidelines are provided in Appendix A.

Table 5 - Measures of Significant Project Impacts

LOS	Allowable Increase on Congested Roads and Intersections				
	Intersections		Road Segments		
	Signalized	Unsignalized	2-Lane Road	4-Lane Road	6-Lane Road
LOS E	Delay of 2 seconds	20 peak hour trips on a critical movement	200 ADT	400 ADT	600 ADT
LOS F	Delay of 1 second, or 5 peak hour trips on a critical movement	5 peak hour trips on a critical movement	100 ADT	200 ADT	300 ADT

Notes:
– A critical movement is one that is experiencing excessive queues.
– By adding proposed project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts.
– The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

ADT = Average Daily Traffic; LOS = Level of Service, sec = Seconds of Delay per Vehicle

Roadway Segments

As shown in Table 5, per the County's Guidelines, a project would be considered to have a significant direct traffic volume and/or level of service traffic impact on a road segment if:

- "The additional or redistributed ADT generated by the proposed project will cause an adjacent or nearby County Circulation Element Road to operate below LOS D and will significantly increase congestion as identified in Table [5], and/or
- The additional or redistributed ADT generated by the proposed project will cause a residential street to exceed its design capacity, and/or
- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a Circulation Element Road, State Highway or intersection currently operating at LOS E or LOS F as identified in Table [5]."

Signalized Intersections

At signalized intersections, the project would be considered to have a significant direct volume and/or level of service traffic impact if:

- "The additional or redistributed ADT generated by the proposed project will cause a signalized intersection to operate below LOS D and will significantly increase congestion as identified in Table [5], and/or
- The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F as identified in Table [5]."

Unsignalized Intersections

At unsignalized intersections, the project would be considered to have a significant direct volume and/or level of service traffic impact if:

- "The proposed project will generate 20 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate below LOS D, or
- The proposed project will generate 20 or more peak hour trips to a critical movement of an unsignalized intersection and the unsignalized intersection currently operates at LOS E, or
- The proposed project will generate 5 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate below LOS E, or
- The proposed project will generate 5 or more peak hour trips to a critical movement of an unsignalized intersection and the unsignalized intersection currently operates at LOS F, or
- Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance and/or other factors, it is found that the generation rate less than those specified above would significantly impact the operations of the intersection."

It should be noted that the significance thresholds summarized in Table 5 are currently only utilized by the County of San Diego to determine if a project has a significant direct and/or future impact. A project is considered to have a significant near term cumulative impact if it adds any traffic to a roadway segment and/or intersection that operates at LOS E or F under near term cumulative conditions.

Consistent with the *Public Facility Element* the criteria described above was only applied to segments and intersections that operate at LOS E or LOS F.

EXISTING PLUS PROJECT CONDITIONS

The daily and peak hour turn volumes for existing plus project conditions are illustrated in Figure 7.

Roadway Segments

The roadway segments were analyzed with the traffic generated from the proposed project added to existing traffic volumes. The roadway segments daily levels of service are summarized in Table 6.

As shown in Table 6, all key roadway segments analyzed continue to operate at an acceptable LOS D or better with the addition of the proposed project and is therefore not considered to have a direct impact.

In addition the proposed project will add less than 100 ADT to all other roadway segments that were not analyzed in Table 6. Since this is less than the County's threshold identified in Table 5, the proposed project will not have any significant direct roadway segment impacts.

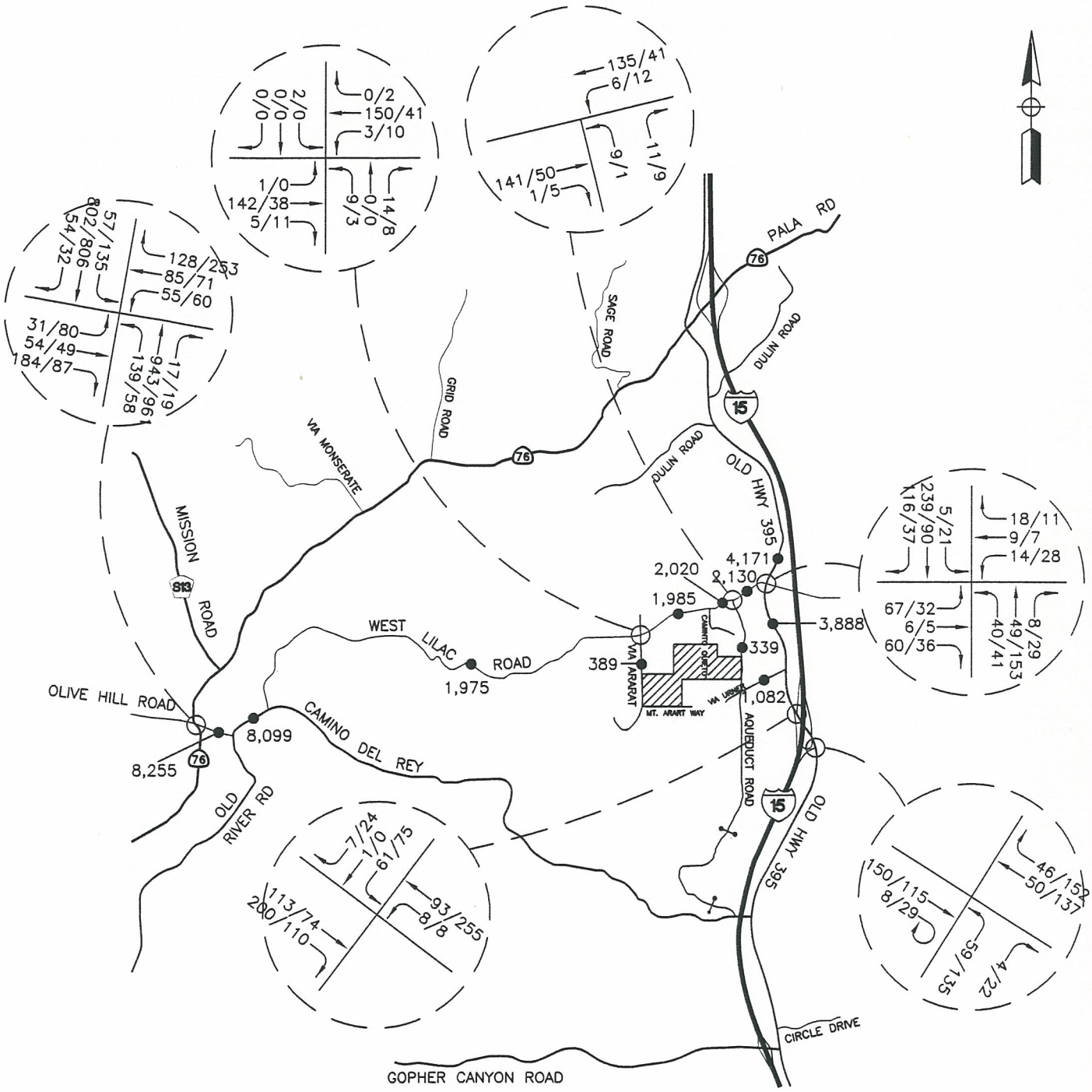
Intersections

The intersections were analyzed with the traffic generated from the proposed project added to existing traffic volumes. The intersections' levels of service for existing plus project conditions are summarized in Table 7. A copy of the Synchro worksheets for existing plus project conditions can be found in Appendix C.

As shown in Table 7, with the exception of the SR-76 (Mission Road)/Olive Hill Road-Camino Del Rey intersection, all intersections analyzed continue to operate at LOS C or better during both the AM and PM peak hours with the addition of project traffic.

The SR-76 (Mission Road)/Olive Hill Road-Camino Del Rey intersection operates at LOS E during the AM peak hour and LOS D during the PM peak hour under existing and existing plus project conditions. The addition of the proposed project increases the existing delay by 1.3 seconds during the AM peak hour and 0.9 seconds during the PM peak hour. This is less than the two (2) seconds allowed per the County of San Diego's draft *Guidelines for Determining Significance*, thus the proposed project is not considered to have a direct impact at the SR-76 (Mission Road)/Olive Hill Road-Camino Del Rey intersection.

In addition, the proposed project will not add more than 5 peak hour trips to any critical movement at any of the intersections that were not analyzed in Table 7. Since this is less than the County's threshold identified in Table 5, the proposed project will not have any significant direct intersection impacts.



LEGEND

XX/YY – AM/PM PEAK HOUR TURN VOLUMES

● Z,ZZZ – AVERAGE DAILY TRAFFIC

——→ – DIRECTION OF TRAVEL

▨ – PROJECT SITE

●——● – GATE

NOM – NOMINAL

Darnell & ASSOCIATES, INC.

030411DD.dwg 5-10-05 TMC

FIGURE 7

EXISTING + PROJECT TRAFFIC VOLUMES

Table 6 - Existing Plus Project Roadway Segment Level of Service Summary

Roadway Segment	Classification	Capacity @ LOS D	Existing		Two-Way Project Traffic	Existing + Project			
			A.D.T.	LOS	A.D.T.	A.D.T.	LOS	Significant	Impact
Camino Del Rey									
-SR-76 to Old River Rd	Light Collector	10,900	7,991	D	108	8,099	D	N/A	None
-Old River Rd to West Lilac Rd	Light Collector	10,900	8,147	D	108	8,255	D	N/A	None
West Lilac Road									
-Camino Del Rey to Via Ararat Dr	Light Collector	10,900	1,867	A	108	1,975	B	N/A	None
-Via Ararat Dr to Caminito Quieto	Light Collector	10,900	1,867	A	118	1,985	B	N/A	None
-Caminito Quieto to Aqueduct Rd	Light Collector	10,900	1,902	B	118	2,020	B	N/A	None
-Aqueduct Rd to Old Highway 395	Light Collector	10,900	1,902	B	228	2,130	B	N/A	None
Old Highway 395									
-Dulin Road to West Lilac Road	Light Collector	10,900	4,118	C	53	4,171	C	N/A	None
-West Lilac Road to Via Urner Wy	Light Collector	10,900	3,713	B	175	3,888	B	N/A	None
Via Ararat Drive (a)									
-West Lilac Rd to Mt. Ararat Wy	Private Road	2,500	258	< C	131	389	< C	N/A	None
Aqueduct Road (a)									
-West Lilac Rd to Via Urner Wy	Private Road	2,500	134	< C	205	339	< C	N/A	None
Via Urner Way (a)									
-Aqueduct Rd to Old Hwy 395	Private Road	2,500	1,082	< C	0	1,082	< C	N/A	None

(a) Levels of Service are not typically applied to non-circulation element roadways. The capacity shown here is the recommended capacity for LOS C
Capacity is based on the upper limit of LOS D per the County of San Diego Level of Service Thresholds
Significance is based on the County of San Diego's *Guidelines for Determining Significance*
< C = Operates at better than LOS C; N/A = Not Applicable because segment operates at LOS D or better

Table 7 - Existing Plus Project Intersection Level of Service Summary

Intersection	Critical Move	Existing				Existing + Project											
		AM Peak		PM Peak		AM Peak						PM Peak					
		Delay	LOS	Delay	LOS	Delay	LOS	Δ Delay	Proj. Trips	Sig.?	Impact	Delay	LOS	Δ Delay	Proj. Trips	Sig.?	Impact
SR-76 @ Olive Hill -Camino Del Rey (Signalized)	Int.	**55.0**	**E**	41.3	D	**56.3**	**E**	**1.3**	**8 (a)**	**No**	**None**	42.2	D	0.9	11 (a)	N/A	None
West Lilac Road @ Via Ararat Drive	WBL	7.8	A	7.3	A	7.8	A	0.0	2	N/A	None	7.3	A	0.0	5	N/A	None
	NB	11.5	B	8.6	A	11.8	B	0.3	7			8.8	A	0.2	4		
	SB	14.0	B	-	-	14.5	B	0.5	0			-	-		0		
West Lilac Road @ Aqueduct Road	WB	0.1	A	-	-	0.4	A	0.3	4	N/A	None	1.7	A	1.7	12	N/A	None
	NB	11.6	B	8.6	A	11.6	B	0.0	12			8.7	A	0.1	6		
West Lilac Road @ Old Hwy 395 (TWSC)	EBL-T	20.2	C	13.9	B	21.1	C	0.9	3	N/A	None	14.6	B	0.7	2	N/A	None
	WBL-T	14.5	B	13.3	B	14.9	B	0.4	0			13.9	B	0.6	0		
	NBL	8.6	A	7.6	A	8.6	A	0.0	4			7.6	A	0.0	13		
	SBL	7.4	A	7.8	A	7.4	A	0.0	0			7.8	A	0.0	0		
Old Hwy 395 @ I-15 SB Ramps (OWSC)	WBL	8.0	A	7.6	A	8.0	A	0.0	0	N/A	None	7.6	A	0.0	0	N/A	None
	SBL-T	10.7	B	11.9	B	10.8	B	0.1	0			12.1	B	0.2	0		
	SBR	8.8	A	9.8	A	8.8	A	0.0	0			9.9	A	0.1	1		
Old Hwy 395 @ I-15 NB Ramps (OWSC)	NBL	10.4	B	11.5	B	10.4	B	0.0	2	N/A	None	11.7	B	0.2	6	N/A	None
	NBR	9.1	A	9.0	A	9.1	A	0.0	0			9.0	A	0.0	0		

Delay = seconds of delay per vehicle; LOS = Level of Service; Δ Delay = Increase (Decrease) in delay measured in seconds/vehicle
Sig.? = County of San Diego's *Guidelines for Determining Significance*; N/A = Not Applicable because intersection operates at LOS D or better;
TWSC = Two-Way Stop-Controlled; OWSC = One-Way Stop-Controlled; EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound;
EBL-T = Eastbound Left-Through; WBL = Westbound Left; WBL-T = Westbound Left-Through;
NBL = Northbound Left; NBR = Northbound Right; SBL = Southbound Left; SBL-T = Southbound Left-Through Lane; SBR = Southbound Right
Proj. Trips = See Figure 6 For Project Related Peak Hour Trips on Each Critical Movement
(a) This is the total two-way peak hour trips added to the intersection. As illustrated in Figure 6, the maximum peak hour trips added to any movement is 5 trips during the AM and PM peak hour and 6 trips during the PM peak hour

CUMULATIVE IMPACTS

The County of San Diego has developed an overall programmatic solution that addresses existing and projected future road deficiencies in the unincorporated portions of San Diego County. This program includes the adoption of a Transportation Impact Fee (TIF) program to fund improvements to roadways necessary to mitigate potential cumulative impacts caused by traffic from future development. Based on SANDAG regional growth and land use forecasts, the SANDAG Regional Transportation Model was utilized to analyze projected build-out (year 2030) development conditions on the existing circulation element roadway network throughout the unincorporated area of the County. Based on the results of the traffic modeling, funding necessary to construct transportation facilities that will mitigate cumulative impacts from new development was identified. Existing roadway deficiencies will be corrected through improvement projects funded by other public funding sources, such as TransNet, gas tax, and grants. Potential cumulative impacts to the region's freeways have been addressed in SANDAG's Regional Transportation Plan (RTP). This plan, which considers freeway buildout over the next 30 years, will use funds from TransNet, state and federal funding to improve freeways to projected level of service objectives in the RTP.

The proposed project generates 336 average daily trips. These trips will be distributed on circulation element roadways in the County that were analyzed by the TIF program, some of which currently or are projected to operate at inadequate levels of service. The potential growth represented by the proposed project was included in the growth projections upon which the TIF program is based. Therefore, payment of the TIF, which will be required at issuance of building permits, in combination with other components of the program described above, will mitigate potential cumulative traffic impacts to less than significant.

See Section VI for the calculation of the Traffic Impact Fees the proposed development will be required to pay to mitigate its potential cumulative impacts.

SECTION V - PROJECT ACCESS, SIGHT DISTANCE, & ON-SITE CIRCULATION

PROJECT ACCESS

As was illustrated in Figure 2 located in Section I, the project proposes to provide one access point off Aqueduct Road at Street "A" and one access point off Via Ararat Drive at Street "D". Both access roads will be designed to provide one lane of ingress and one lane of egress. Due to the low volume of traffic on Aqueduct Road and Via Ararat Drive (less than 400 ADT), the conflicting turn volumes at the project access roads will be light. Thus both access roads are expected to operate at an acceptable level of service without the addition of acceleration/deceleration lanes.

To address the concern that residents of the project will utilize the private road Via Urner Way located south of the project's access on Aqueduct Road as a cut-through route to get to Old Highway 395, the developer has agreed to install a Left Turn only sign at the project's access (Street "A") exiting onto Aqueduct Road. The Left Turn only signage will direct the project's traffic to travel north on Aqueduct Road and away from Via Urner Way.

As discussed in Section II, Via Ararat Drive and Aqueduct Road are currently only twenty (20) feet wide which does not meet the County's private road standards. As part of the project development, however, the developer proposes to widen Via Ararat Drive to 24 feet of pavement on 28 feet of graded width. The proposed improvements will bring the cross-section of Aqueduct Road up to the County's Private Road Standards. The proposed grading plan for the planned improvements to Aqueduct Road is provided in Appendix D.

In order for Via Ararat Drive to be widened to provide the 24 feet of pavement as required by the County's Private Road, the existing overhead power line along the west side of the roadway would need to be placed underground. Since this would be cost prohibitive, the developer is proposing to relocate the existing power poles and provide 22.5 feet of pavement.

Although the 22.5 feet of pavement does not comply with County standards, the proposed improvements would be adequate and safe. The reasons for determining that the improvements would be safe is that the projected traffic volumes on Via Ararat Drive under existing plus project conditions is only 389 daily vehicles. Further, the typical residential street which is 36 feet wide provides a 20 foot (20') travel way and an eight foot (8') parking lane on each side of the roadway. Thus, the proposed improvements to Via Ararat Drive would provide a larger unobstructed pavement width than the typical residential street. For additional safety it is recommended that the following actions be included in the improvement plans: (1) place a 4-inch (4") white edge line along each side of the roadway; and (2) place delineators at each power pole or arrange to place reflective markings on each pole. The proposed grading plan for the planned improvements to Via Ararat Drive is provided in Appendix D.

It should be noted that the proposed improvement plans for Via Ararat Drive will require a design exception to reduce the pavement width to 22.5 feet. The developer has already submitted the design exception request to the County for their review and consideration.

SIGHT DISTANCE

In response to comments received from the County of San Diego, Darnell & Associates, Inc. (D&A) reevaluated the prevailing speeds and available sight distance on West Lilac Road at Via Ararat Drive. Speed surveys conducted by D&A found that the 85th percentile speed of westbound traffic on West Lilac Road just east of Via Ararat Drive was 36 miles per hour. (A copy of the speed survey is provided in Appendix D.)

Utilizing the 85th percentile travel speed, D&A calculated the minimum stopping sight distance required based on the Association of State Highway and Transportation Officials' (AASHTO's) criteria. Table 8 shows the stopping sight distance calculations assuming a level grade, a braking-reaction time of 1.5 seconds, and a deceleration rate of 11.2 feet per second squared. As can be seen in Table 1, the minimum stopping sight distance required looking to the east of the West Lilac Road/Via Ararat intersection is 204 feet.

Table 8 - Stopping Sight Distance Requirements Per AASHTO

Location	Speed - V [(a)] (mph)	Reaction Time - t (seconds)	Deceleration Rate - a (ft/sec^2)	Reaction Distance - d_1 (feet)	Braking Distance - d_2 (feet)	**Stopping Sight Distance - d (feet)**
West Lilac e/o Via Ararat						
Westbound	36	1.5	11.2	79	124	**204**

(a) Speeds are based on the speed surveys conducted by D&A in August 2005
Note: All calculations assume the grade is level
e/o = East of; $d_1 = 1.47Vt$; $d_2 = 1.075 (V^2 \div a)$; $d = d_1 + d_2$

Field investigations conducted on August 18, 2005 found there to be approximately 220 feet of sight distance looking east of the West Lilac Road/Via Ararat intersection. Therefore, there is adequate stopping sight distance provided at the intersection. Further, a 132-foot long, 10-foot wide acceleration lane for traffic turning left from northbound Via Ararat onto westbound West Lilac Road has just recently been constructed. The acceleration lane provides for a safe movement for vehicles to turn left from Via Ararat and enter the acceleration lane, then accelerate to merge in with westbound traffic on West Lilac Road. The addition of the acceleration lane increases the total stopping sight distance to approximately 380 feet plus the lane transition.

ON-SITE CIRCULATION

As currently designed, the project site will be divided into two sections. The northern section of the project consists of 17 dwelling units with the primary access being provided via one access point, Street "A", on Aqueduct Road. The southern section of the project consists of 11 dwelling units with the primary access being provided via one access point, Street "D", on Via Ararat Drive. Street "A" will extend from Aqueduct Road southwesterly to connect the two sections of the project.

SECTION VI - PROJECT MITIGATION

ROADWAY SEGMENTS

Direct Impacts

- The proposed project does not have any significant direct roadway segment impacts. Thus mitigation by the proposed project is not required.

Cumulative Impacts

- To mitigate the project's cumulative roadway segment impacts, the developer will pay the Traffic Impact Fees as discussed below.

INTERSECTIONS

Direct Impacts

- The proposed project does not have any significant direct intersection impacts. Thus mitigation by the proposed project is not required.

Cumulative Impacts

- To mitigate the project's cumulative intersection impacts, the developer will pay the Traffic Impact Fees as discussed below.

PROJECT FRONTAGE IMPROVEMENTS

- As part of the development of the project, the developer proposes to widen Aqueduct Road to 24 feet of pavement on 28 feet of graded width. The proposed improvements will bring the cross-section of Aqueduct Road up to the County's Private Road Standards. A copy of the proposed improvement plan for Aqueduct Road is provided in Appendix D.

- The developer also proposes to widen Via Ararat Drive to provide 22.5 feet of pavement. It should be noted that the County's Private Road Standards require 24 feet of pavement, thus even with the proposed improvements the cross-section of Via Ararat Drive will not comply with County standards. Therefore, the applicant has submitted a design exception request to the County for their review and consideration. A copy of the proposed improvement plan for Via Ararat Drive is provided in Appendix D.

- The developer will install a Left Turn only sign at the project's access (Street "A") exiting onto Aqueduct Road to direct the residents away from Via Urner Way.

COUNTY OF SAN DIEGO TRAFFIC IMPACT FEE (TIF) PROGRAM

- The County Board of Supervisors adopted the County of San Diego Traffic Impact Fee (TIF) ordinance on April 13, 2005. Per the adopted TIF, the fee for single-family dwelling units in the Bonsall area is $10,455 per dwelling unit. Thus, per the TIF program, the proposed West Lilac Residential Subdivision (TM 5276) project would be required to pay a total of $292,740 (i.e. $10,455/unit X 28 units = $292,740) for traffic impact fees. This fee covers roadway improvements in the Bonsall area as well as more regional roadway improvements. The Traffic Impact Fee will be assessed at the time of issuance of building permits.

SECTION VII - SUMMARY OF FINDINGS AND CONCLUSIONS

- The developer proposes to construct a twenty-eight (28) lot single-family estate residential subdivision south of West Lilac Road between Via Ararat Drive and Aqueduct Road in the Bonsall Community of San Diego County.

- The proposed project is estimated to generate 336 average daily trips, 27 AM peak hour trips, and 34 PM peak hour trips.

- The proposed project does not have any significant direct roadway or intersection impacts.

- To mitigate the project's cumulative impacts, the developer will pay the Traffic Impact Fees as discussed in Section VI.

- As part of the development of the project, the developer proposes to widen Aqueduct Road to 24 feet of pavement on 28 feet of graded width. The proposed improvements will bring the cross-section of Aqueduct Road up to the County's Private Road Standards.

- The developer also proposes to widen Via Ararat Drive to provide 22.5 feet of pavement. It should be noted that the County's Private Road Standards require 24 feet of pavement, thus even with the proposed improvements the cross-section of Via Ararat Drive will not comply with County standards. Therefore, the applicant has submitted a design exception request to the County for their review and consideration.

APPENDIX A

- 24-Hour Segment Counts
- AM/PM Peak Hour Turn Counts
- County of San Diego Level of Service Thresholds
- Excerpts from the County's Private Road Standards
- Excerpts from the *Public Facilities Element*
- Excerpts from the County's *Guidelines for Determining Significance*

- 24-Hour Segment Counts

Volumes for: Thursday, January 06, 2005 City: Bonsall Project #: 04-4444-001

Location: Camino del Ray btwn Mission Rd (SR76) and Old River Rd

AM Period	NB	SB	EB	WB		PM Period	NB	SB	EB	WB	
00:00			8	8		12:00			51	39	
00:15			2	6		12:15			45	37	
00:30			4	3		12:30			40	40	
00:45			4	0		12:45			70	42	
			18	17	35				206	158	364
01:00			3	2		13:00			70	42	
01:15			2	4		13:15			67	60	
01:30			2	4		13:30			60	51	
01:45			1	1		13:45			55	50	
			8	11	19				252	203	455
02:00			5	4		14:00			60	60	
02:15			5	1		14:15			52	52	
02:30			1	2		14:30			70	65	
02:45			1	0		14:45			72	103	
			12	7	19				254	280	534
03:00			0	1		15:00			92	83	
03:15			2	3		15:15			82	94	
03:30			0	1		15:30			91	122	
03:45			1	1		15:45			77	123	
			3	6	9				342	422	764
04:00			1	2		16:00			78	107	
04:15			3	4		16:15			66	97	
04:30			2	3		16:30			61	107	
04:45			4	5		16:45			75	121	
			10	14	24				280	432	712
05:00			9	5		17:00			70	103	
05:15			17	5		17:15			63	105	
05:30			27	13		17:30			65	117	
05:45			23	14		17:45			53	112	
			76	37	113				251	437	688
06:00			35	20		18:00			60	80	
06:15			51	16		18:15			55	96	
06:30			37	24		18:30			46	73	
06:45			42	23		18:45			42	64	
			165	83	248				203	313	516
07:00			57	37		19:00			44	67	
07:15			84	48		19:15			39	43	
07:30			75	76		19:30			34	41	
07:45			44	90		19:45			32	35	
			260	251	511				149	186	335
08:00			77	69		20:00			35	29	
08:15			76	65		20:15			22	18	
08:30			62	55		20:30			26	24	
08:45			108	54		20:45			29	24	
			323	243	566				112	95	207
09:00			134	104		21:00			30	24	
09:15			102	144		21:15			28	11	
09:30			51	65		21:30			32	25	
09:45			44	60		21:45			17	19	
			331	373	704				107	79	186
10:00			45	45		22:00			26	18	
10:15			50	50		22:15			14	10	
10:30			61	54		22:30			14	16	
10:45			58	56		22:45			11	13	
			214	205	419				65	57	122
11:00			54	60		23:00			16	4	
11:15			40	50		23:15			13	9	
11:30			42	52		23:30			8	10	
11:45			39	41		23:45			1	2	
			175	203	378				38	25	63
Total Vol.			1595	1450	**3045**				2259	2687	**4946**

Daily Totals

NB	SB	EB	WB	Combined
		3854	4137	**7991**

	AM			PM		
Split %	52.4%	47.6%	**38.1%**	45.7%	54.3%	**61.9%**
Peak Hour	08:30	09:00	**08:30**	15:00	15:30	**15:15**
Volume	406	373	**763**	342	449	**774**
P.H.F.	0.76	0.65	**0.78**	0.93	0.91	**0.91**

Volumes for: Thursday, January 06, 2005 City: Bonsall Project #: 04-4444-002

Location: Camino del Ray btwn Old River Rd and West Lilac

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			5		6			12:00			50		60		
00:15			5		2			12:15			51		67		
00:30			2		1			12:30			55		70		
00:45			5	17	2	11	28	12:45			57	213	50	247	460
01:00			4		3			13:00			80		57		
01:15			4		4			13:15			71		60		
01:30			1		3			13:30			70		61		
01:45			5	14	1	11	25	13:45			67	288	65	243	531
02:00			4		2			14:00			63		59		
02:15			4		1			14:15			86		52		
02:30			1		1			14:30			55		104		
02:45			0	9	2	6	15	14:45			73	277	69	284	561
03:00			2		2			15:00			76		94		
03:15			0		1			15:15			72		87		
03:30			3		2			15:30			121		92		
03:45			1	6	3	8	14	15:45			117	386	82	355	741
04:00			3		6			16:00			114		60		
04:15			5		2			16:15			91		73		
04:30			3		6			16:30			82		116		
04:45			4	15	2	16	31	16:45			88	375	87	336	711
05:00			24		6			17:00			71		75		
05:15			24		15			17:15			83		100		
05:30			21		20			17:30			86		104		
05:45			39	108	29	70	178	17:45			81	321	59	338	659
06:00			42		28			18:00			65		61		
06:15			47		27			18:15			64		55		
06:30			43		40			18:30			61		59		
06:45			47	179	47	142	321	18:45			54	244	44	219	463
07:00			66		69			19:00			47		39		
07:15			83		90			19:15			48		40		
07:30			40		118			19:30			39		35		
07:45			50	239	99	376	615	19:45			45	179	35	149	328
08:00			56		92			20:00			27		20		
08:15			40		83			20:15			26		24		
08:30			52		67			20:30			32		23		
08:45			78	226	111	353	579	20:45			31	116	17	84	200
09:00			97		106			21:00			43		17		
09:15			58		52			21:15			32		18		
09:30			44		62			21:30			26		23		
09:45			33	232	54	274	506	21:45			27	128	17	75	203
10:00			37		50			22:00			22		17		
10:15			40		56			22:15			13		13		
10:30			42		60			22:30			15		17		
10:45			39	158	61	227	385	22:45			14	64	10	57	121
11:00			40		70			23:00			13		4		
11:15			42		71			23:15			11		10		
11:30			30		60			23:30			4		3		
11:45			36	148	65	266	414	23:45			7	35	6	23	58
Total Vol.				1351		1760	**3111**					2626		2410	**5036**

Daily Totals

NB	SB	EB	WB	Combined
		3977	4170	**8147**

	AM			PM		
Split %	43.4%	56.6%	**38.2%**	52.1%	47.9%	**61.8%**
Peak Hour	08:30	07:15	**08:15**	15:30	16:30	**15:30**
Volume	285	399	**634**	443	378	**750**
P.H.F.	0.73	0.85	**0.78**	0.92	0.81	**0.88**

Volumes for: Wednesday, September 08, 2004 City: Fallbrook Project #: 04-4278-002

Location: W. Lilac Rd Btwn Via Ararat Dr & Caminito Quieto

AM Period	NB	SB	EB	WB		PM Period	NB	SB	EB	WB	
00:00			1	2		12:00			12	10	
00:15			0	1		12:15			16	10	
00:30			1	1		12:30			12	12	
00:45			1	0		12:45			7	7	
	3		4	7			47		39		86
01:00			0	1		13:00			9	8	
01:15			1	1		13:15			8	10	
01:30			0	0		13:30			10	17	
01:45			1	0		13:45			11	18	
	2		2	4			38		53		91
02:00			0	0		14:00			12	10	
02:15			0	0		14:15			18	17	
02:30			1	0		14:30			15	18	
02:45			0	1		14:45			11	10	
	1		1	2			56		55		111
03:00			0	0		15:00			10	20	
03:15			0	0		15:15			17	24	
03:30			1	1		15:30			35	24	
03:45			1	0		15:45			40	24	
	2		1	3			102		92		194
04:00			0	0		16:00			23	18	
04:15			0	1		16:15			25	21	
04:30			1	0		16:30			17	19	
04:45			1	1		16:45			10	12	
	2		1	2			75		70		145
05:00			1	2		17:00			14	19	
05:15			2	2		17:15			22	21	
05:30			3	2		17:30			12	24	
05:45			3	7		17:45			14	12	
	9		7	13			62		76		138
06:00			14	5		18:00			12	13	
06:15			18	7		18:15			16	13	
06:30			17	10		18:30			4	7	
06:45			17	19		18:45			14	12	
	66		41	107			46		45		91
07:00			19	23		19:00			8	7	
07:15			29	61		19:15			7	8	
07:30			64	71		19:30			4	6	
07:45			20	22		19:45			2	4	
	132		177	309			21		25		46
08:00			16	14		20:00			6	4	
08:15			10	14		20:15			3	1	
08:30			6	16		20:30			3	8	
08:45			17	39		20:45			6	6	
	49		83	132			18		19		37
09:00			22	33		21:00			1	7	
09:15			16	12		21:15			3	3	
09:30			10	11		21:30			2	4	
09:45			11	13		21:45			5	3	
	59		69	128			11		17		28
10:00			11	7		22:00			6	3	
10:15			11	8		22:15			0	2	
10:30			10	7		22:30			6	5	
10:45			8	6		22:45			1	3	
	40		28	68			13		13		26
11:00			15	5		23:00			1	4	
11:15			12	7		23:15			0	2	
11:30			18	10		23:30			1	0	
11:45			2	8		23:45			1	2	
	47		30	77			3		8		11
Total Vol.			412	451	**863**				492	512	**1004**

Daily Totals

NB	SB	EB	WB	Combined
		904	963	**1867**

	AM			PM		
Split %	47.7%	52.3%	**46.2%**	49.0%	51.0%	**53.8%**
Peak Hour	07:00	07:00	**07:00**	15:30	15:00	**15:30**
Volume	132	177	**309**	123	92	**210**
P.H.F.	0.52	0.62	**0.57**	0.77	0.96	**0.82**

Volumes for: Wednesday, September 08, 2004 City: Fallbrook Project #: 04-4278-003

Location: W. Lilac Rd Btwn Caminito Quieto & Aqueduct Rd

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			1		2			12:00			8		11		
00:15			0		1			12:15			9		12		
00:30			0		2			12:30			10		10		
00:45			1	2	0	5	7	12:45			15	42	7	40	82
01:00			0		1			13:00			12		7		
01:15			0		2			13:15			18		8		
01:30			0		0			13:30			10		10		
01:45			0	0	1	4	4	13:45			17	57	11	36	93
02:00			0		0			14:00			12		18		
02:15			0		0			14:15			11		12		
02:30			1		0			14:30			17		17		
02:45			0	1	1	1	2	14:45			13	53	14	61	114
03:00			0		0			15:00			14		23		
03:15			0		0			15:15			16		29		
03:30			0		0			15:30			36		22		
03:45			1	1	1	1	2	15:45			44	110	23	97	207
04:00			0		0			16:00			19		15		
04:15			0		1			16:15			31		22		
04:30			0		0			16:30			15		20		
04:45			0	0	2	3	3	16:45			11	76	13	70	146
05:00			1		3			17:00			19		18		
05:15			1		2			17:15			15		17		
05:30			2		4			17:30			10		25		
05:45			3	7	5	14	21	17:45			14	58	10	70	128
06:00			16		4			18:00			15		18		
06:15			18		3			18:15			10		11		
06:30			13		12			18:30			7		10		
06:45			15	62	16	35	97	18:45			11	43	10	49	92
07:00			16		29			19:00			9		10		
07:15			34		77			19:15			8		10		
07:30			67		60			19:30			4		6		
07:45			19	136	19	185	321	19:45			1	22	5	31	53
08:00			15		17			20:00			6		5		
08:15			11		17			20:15			3		4		
08:30			8		13			20:30			1		10		
08:45			13	47	41	88	135	20:45			4	14	7	26	40
09:00			22		33			21:00			1		7		
09:15			21		10			21:15			2		2		
09:30			7		13			21:30			3		6		
09:45			13	63	12	68	131	21:45			4	10	3	18	28
10:00			11		11			22:00			5		5		
10:15			10		12			22:15			0		2		
10:30			8		15			22:30			3		4		
10:45			9	38	10	48	86	22:45			1	9	5	16	25
11:00			7		8			23:00			1		4		
11:15			8		9			23:15			0		2		
11:30			9		10			23:30			1		1		
11:45			10	34	12	39	73	23:45			1	3	2	9	12
Total Vol.				391		491	**882**					497		523	**1020**

Daily Totals

NB	SB	EB	WB	Combined
		888	1014	**1902**

	AM			PM		
Split %	44.3%	55.7%	**46.4%**	48.7%	51.3%	**53.6%**
Peak Hour	07:00	07:00	**07:00**	15:30	15:00	**15:30**
Volume	136	185	**321**	130	97	**212**
P.H.F.	0.51	0.60	**0.63**	0.74	0.84	**0.79**

Volumes for: Wednesday, September 08, 2004 City: Fallbrook Project #: 04-4278-005

Location: Old Hwy 395 N. N/o Lilac Rd

AM Period	NB		SB		EB	WB	PM Period	NB		SB		EB	WB	
00:00	3		3				12:00	42		29				
00:15	0		2				12:15	35		30				
00:30	1		5				12:30	31		31				
00:45	1	5	0	10	15		12:45	30	138	18	108			246
01:00	0		2				13:00	29		27				
01:15	4		2				13:15	18		29				
01:30	1		0				13:30	27		30				
01:45	1	6	2	6	12		13:45	22	96	31	117			213
02:00	1		3				14:00	18		34				
02:15	0		1				14:15	21		40				
02:30	4		0				14:30	20		42				
02:45	2	7	1	5	12		14:45	40	99	37	153			252
03:00	0		1				15:00	35		37				
03:15	0		3				15:15	35		42				
03:30	1		1				15:30	30		57				
03:45	2	3	2	7	10		15:45	47	147	68	204			351
04:00	1		2				16:00	45		45				
04:15	0		2				16:15	48		35				
04:30	1		1				16:30	58		32				
04:45	0	2	4	9	11		16:45	42	193	36	148			341
05:00	1		6				17:00	31		36				
05:15	1		18				17:15	44		40				
05:30	4		24				17:30	64		22				
05:45	10	16	38	86	102		17:45	54	193	26	124			317
06:00	7		32				18:00	55		25				
06:15	7		47				18:15	41		31				
06:30	10		59				18:30	40		19				
06:45	12	36	57	195	231		18:45	43	179	20	95			274
07:00	27		58				19:00	25		21				
07:15	26		95				19:15	30		23				
07:30	57		116				19:30	19		16				
07:45	21	131	79	348	479		19:45	23	97	13	73			170
08:00	23		62				20:00	14		7				
08:15	17		51				20:15	12		7				
08:30	15		57				20:30	8		14				
08:45	19	74	54	224	298		20:45	12	46	6	34			80
09:00	17		52				21:00	11		11				
09:15	16		28				21:15	14		6				
09:30	22		33				21:30	14		9				
09:45	17	72	32	145	217		21:45	8	47	5	31			78
10:00	13		29				22:00	15		8				
10:15	13		25				22:15	11		10				
10:30	18		20				22:30	11		4				
10:45	17	61	20	94	155		22:45	5	42	6	28			70
11:00	15		21				23:00	5		4				
11:15	17		18				23:15	2		3				
11:30	20		20				23:30	3		1				
11:45	21	73	26	85	158		23:45	1	11	7	15			26
Total Vol.		486		1214	**1700**			1288		1130				**2418**

Daily Totals

NB	SB	EB	WB	Combined
1774	2344			**4118**

	AM			PM		
Split %	28.6%	71.4%	**41.3%**	53.3%	46.7%	**58.7%**
Peak Hour	07:00	07:15	**07:00**	17:15	15:15	**15:45**
Volume	131	352	**479**	217	212	**378**
P.H.F.	0.57	0.76	**0.69**	0.84	0.78	**0.82**

Volumes for: Wednesday, September 08, 2004 City: Fallbrook Project #: 04-4278-004

Location: Old Hwy 395 S. S/o Lilac Rd

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	1		1					12:00	19		20				
00:15	1		0					12:15	21		26				
00:30	2		3					12:30	20		18				
00:45	1	5	0	4			9	12:45	18	78	20	84			162
01:00	3		0					13:00	21		18				
01:15	2		0					13:15	19		21				
01:30	1		2					13:30	20		20				
01:45	2	8	0	2			10	13:45	20	80	18	77			157
02:00	1		3					14:00	17		31				
02:15	0		0					14:15	18		30				
02:30	4		0					14:30	20		29				
02:45	0	5	0	3			8	14:45	31	86	20	110			196
03:00	0		2					15:00	30		31				
03:15	2		2					15:15	22		30				
03:30	1		1					15:30	39		43				
03:45	0	3	2	7			10	15:45	50	141	41	145			286
04:00	0		3					16:00	45		43				
04:15	0		0					16:15	58		32				
04:30	0		3					16:30	48		31				
04:45	0	0	5	11			11	16:45	45	196	25	131			327
05:00	3		11					17:00	32		32				
05:15	2		26					17:15	55		25				
05:30	7		31					17:30	54		17				
05:45	9	21	38	106			127	17:45	47	188	23	97			285
06:00	7		45					18:00	52		21				
06:15	8		67					18:15	45		21				
06:30	15		64					18:30	55		11				
06:45	21	51	50	226			277	18:45	34	186	23	76			262
07:00	41		58					19:00	30		21				
07:15	42		75					19:15	28		21				
07:30	22		84					19:30	27		17				
07:45	16	121	73	290			411	19:45	22	107	4	63			170
08:00	12		54					20:00	12		8				
08:15	20		51					20:15	17		5				
08:30	21		48					20:30	22		9				
08:45	13	66	39	192			258	20:45	21	72	4	26			98
09:00	19		39					21:00	11		4				
09:15	17		37					21:15	20		8				
09:30	19		25					21:30	22		2				
09:45	16	71	38	139			210	21:45	16	69	7	21			90
10:00	12		25					22:00	18		6				
10:15	10		19					22:15	15		3				
10:30	18		17					22:30	13		5				
10:45	10	50	18	79			129	22:45	12	58	3	17			75
11:00	11		10					23:00	2		1				
11:15	18		15					23:15	5		1				
11:30	20		17					23:30	4		2				
11:45	21	70	12	54			124	23:45	3	14	3	7			21
Total Vol.		471		1113			**1584**			1275		854			**2129**

Daily Totals

NB	SB	EB	WB	Combined
1746	1967			**3713**

	AM			PM		
Split %	29.7%	70.3%	**42.7%**	59.9%	40.1%	**57.3%**
Peak Hour	06:45	07:00	**07:00**	17:15	15:30	**15:30**
Volume	126	290	**411**	208	159	**351**
P.H.F.	0.75	0.86	**0.88**	0.92	0.92	**0.96**

Volumes for: Thursday, January 06, 2005 City: Bonsall Project #: 04-4444-005

Location: Via Ararat btwn West Lilac Rd and Mt Ararat Way

AM Period	NB		SB		EB	WB	PM Period	NB		SB		EB	WB	
00:00	1		0				12:00	1		1				
00:15	0		1				12:15	2		3				
00:30	0		0				12:30	2		2				
00:45	0	1	0	1	2		12:45	1	6	1	7			13
01:00	0		1				13:00	4		4				
01:15	0		0				13:15	4		1				
01:30	0		0				13:30	2		2				
01:45	0	0	0	1	1		13:45	2	12	2	9			21
02:00	0		0				14:00	1		3				
02:15	0		0				14:15	3		1				
02:30	0		0				14:30	2		2				
02:45	0	0	0	0			14:45	1	7	4	10			17
03:00	0		0				15:00	4		3				
03:15	0		0				15:15	2		2				
03:30	0		0				15:30	5		4				
03:45	0	0	0	0			15:45	4	15	3	12			27
04:00	0		0				16:00	1		5				
04:15	1		1				16:15	2		6				
04:30	1		1				16:30	1		2				
04:45	0	2	0	2	4		16:45	4	8	2	15			23
05:00	1		1				17:00	0		1				
05:15	0		0				17:15	3		1				
05:30	0		0				17:30	1		3				
05:45	0	1	0	1	2		17:45	1	5	0	5			10
06:00	2		0				18:00	0		2				
06:15	4		1				18:15	1		3				
06:30	0		1				18:30	2		0				
06:45	6	12	0	2	14		18:45	0	3	1	6			9
07:00	3		0				19:00	0		0				
07:15	5		2				19:15	0		2				
07:30	3		2				19:30	0		1				
07:45	4	15	1	5	20		19:45	1	1	1	4			5
08:00	1		1				20:00	0		0				
08:15	4		6				20:15	1		0				
08:30	2		1				20:30	0		1				
08:45	3	10	1	9	19		20:45	0	1	1	2			3
09:00	3		2				21:00	1		3				
09:15	4		4				21:15	0		3				
09:30	1		1				21:30	0		2				
09:45	2	10	2	9	19		21:45	0	1	1	9			10
10:00	1		2				22:00	0		1				
10:15	3		1				22:15	0		0				
10:30	2		3				22:30	0		0				
10:45	2	8	2	8	16		22:45	0	0	1	2			2
11:00	1		2				23:00	0		1				
11:15	3		3				23:15	1		1				
11:30	1		4				23:30	0		0				
11:45	1	6	1	10	16		23:45	2	3	0	2			5
Total Vol.		65		48	**113**				62		83			**145**

Daily Totals

NB	SB	EB	WB	Combined
127	131			**258**

	AM			PM		
Split %	57.5%	42.5%	**43.8%**	42.8%	57.2%	**56.2%**
Peak Hour	06:45	10:45	**07:30**	15:00	15:30	**15:30**
Volume	17	11	**22**	15	18	**30**
P.H.F.	0.71	0.69	**0.55**	0.80	0.75	**0.83**

Volumes for: Thursday, January 06, 2005 City: Bonsall Project #: 04-4444-006

Location: Aqueduct btwn West Lilac Rd and Via Urner

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	0		0					12:00	1		1				
00:15	0		0					12:15	1		0				
00:30	0		0					12:30	2		3				
00:45	0	0	0	0				12:45	2	6	0	4			10
01:00	0		0					13:00	1		1				
01:15	0		0					13:15	0		2				
01:30	0		0					13:30	2		0				
01:45	0	0	0	0				13:45	1	4	1	4			8
02:00	0		0					14:00	1		1				
02:15	0		0					14:15	2		0				
02:30	0		0					14:30	0		1				
02:45	0	0	0	0				14:45	1	4	0	2			6
03:00	0		0					15:00	3		2				
03:15	0		0					15:15	0		1				
03:30	0		0					15:30	0		1				
03:45	0	0	0	0				15:45	2	5	0	4			9
04:00	0		0					16:00	1		2				
04:15	0		0					16:15	0		0				
04:30	0		0					16:30	1		4				
04:45	1	1	1	1			2	16:45	7	9	4	10			19
05:00	0		0					17:00	4		1				
05:15	0		0					17:15	0		0				
05:30	0		0					17:30	4		0				
05:45	0	0	0	0				17:45	0	8	1	2			10
06:00	0		2					18:00	0		0				
06:15	1		0					18:15	0		0				
06:30	1		2					18:30	0		0				
06:45	1	3	4	8			11	18:45	0	0	0	0			
07:00	1		5					19:00	0		0				
07:15	0		1					19:15	0		0				
07:30	1		0					19:30	0		0				
07:45	4	6	0	6			12	19:45	1	1	3	3			4
08:00	2		1					20:00	0		0				
08:15	1		1					20:15	2		0				
08:30	1		1					20:30	0		0				
08:45	3	7	2	5			12	20:45	0	2	0	0			2
09:00	2		2					21:00	0		0				
09:15	3		2					21:15	0		0				
09:30	2		1					21:30	0		0				
09:45	1	8	1	6			14	21:45	0	0	0	0			
10:00	1		2					22:00	0		0				
10:15	2		0					22:15	0		0				
10:30	0		1					22:30	0		0				
10:45	1	4	1	4			8	22:45	0	0	0	0			
11:00	2		1					23:00	0		0				
11:15	0		0					23:15	0		0				
11:30	0		2					23:30	0		0				
11:45	1	3	1	4			7	23:45	0	0	0	0			
Total Vol.		32		34			**66**			39		29			**68**

Daily Totals

NB	SB	EB	WB	Combined
71	63			**134**

	AM			PM		
Split %	48.5%	51.5%	**49.3%**	57.4%	42.6%	**50.7%**
Peak Hour	08:45	06:30	**08:45**	16:45	16:00	**16:15**
Volume	10	12	**17**	15	10	**21**
P.H.F.	0.83	0.60	**0.85**	0.39	0.63	**0.48**

Volumes for: Thursday, January 06, 2005 City: Bonsall Project #: 04-4444-004

Location: Via Urner btwn Aqueduct Rd and Old Hwy 395

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			0		1			12:00			10		6		
00:15			0		0			12:15			15		8		
00:30			0		0			12:30			12		7		
00:45			0	0	0	1	1	12:45			11	48	7	28	76
01:00			0		0			13:00			12		6		
01:15			0		0			13:15			9		9		
01:30			0		0			13:30			8		7		
01:45			0	0	0	0		13:45			8	37	8	30	67
02:00			0		0			14:00			10		10		
02:15			0		0			14:15			9		11		
02:30			0		0			14:30			8		11		
02:45			1	1	0	0	1	14:45			11	38	10	42	80
03:00			0		1			15:00			10		7		
03:15			0		0			15:15			8		10		
03:30			0		0			15:30			6		7		
03:45			0	0	0	1	1	15:45			16	40	10	34	74
04:00			1		0			16:00			8		9		
04:15			0		0			16:15			7		9		
04:30			1		1			16:30			13		8		
04:45			0	2	0	1	3	16:45			16	44	7	33	77
05:00			0		0			17:00			15		12		
05:15			2		1			17:15			10		10		
05:30			2		0			17:30			86		5		
05:45			1	5	1	2	7	17:45			9	120	5	32	152
06:00			0		2			18:00			11		5		
06:15			8		12			18:15			8		11		
06:30			6		31			18:30			5		5		
06:45			12	26	47	92	118	18:45			4	28	2	23	51
07:00			13		24			19:00			1		2		
07:15			9		8			19:15			2		0		
07:30			12		7			19:30			1		3		
07:45			6	40	6	45	85	19:45			4	8	3	8	16
08:00			14		5			20:00			1		1		
08:15			10		10			20:15			1		3		
08:30			7		3			20:30			2		1		
08:45			12	43	4	22	65	20:45			0	4	3	8	12
09:00			9		7			21:00			1		1		
09:15			10		5			21:15			1		2		
09:30			7		5			21:30			0		0		
09:45			5	31	6	23	54	21:45			0	2	1	4	6
10:00			6		4			22:00			0		2		
10:15			7		7			22:15			0		0		
10:30			8		7			22:30			1		3		
10:45			8	29	8	26	55	22:45			0	1	3	8	9
11:00			9		9			23:00			0		0		
11:15			8		10			23:15			1		1		
11:30			10		8			23:30			0		1		
11:45			8	35	7	34	69	23:45			0	1	0	2	3
Total Vol.				212		247	**459**					371		252	**623**

Daily Totals

NB	SB	EB	WB	Combined
		583	499	**1082**

	AM			PM		
Split %	46.2%	53.8%	**42.4%**	59.6%	40.4%	**57.6%**
Peak Hour	06:45	06:15	**06:15**	16:45	14:00	**16:45**
Volume	46	114	**153**	127	42	**161**
P.H.F.	0.88	0.61	**0.65**	0.37	0.95	**0.44**

- AM/PM Peak Hour Turn Counts

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-76 DATE: 1/20/2005 LOCATION: City of Bonsall

E-W STREET: Camino del Ray DAY: THURSDAY PROJECT# 05-4018-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	1	0	1	1	0	1	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	36	205	4	11	160	18	9	15	55	14	50	27	604
7:15 AM	33	232	4	8	241	14	10	17	54	10	25	32	680
7:30 AM	31	239	6	13	220	8	4	12	39	9	25	29	635
7:45 AM	43	226	1	16	164	10	11	19	46	16	17	36	605
8:00 AM	32	246	4	20	177	22	6	6	45	15	18	30	621
8:15 AM	36	238	7	11	169	21	4	10	35	19	19	22	591
8:30 AM	50	196	10	13	128	27	11	15	56	12	27	26	571
8:45 AM	69	219	7	23	189	19	20	21	72	11	27	17	694
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 330	NT 1801	NR 43	SL 115	ST 1448	SR 139	EL 75	ET 115	ER 402	WL 106	WT 208	WR 219	TOTAL 5001

AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	139	943	15	57	802	54	31	54	184	50	85	127	2541
PEAK HR. FACTOR:		0.973			0.868			0.830			0.949		0.934

CONTROL: SIGNALIZED 1

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SR-76 DATE: 1/20/2005 LOCATION: City of Bonsall

E-W STREET: Camino del Ray DAY: THURSDAY PROJECT# 05-4018-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	1	0	1	1	0	1	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	8	211	6	25	186	7	11	14	23	8	19	37	555
4:15 PM	16	237	3	37	205	10	15	19	19	9	11	67	648
4:30 PM	17	241	3	33	202	6	25	8	27	11	25	64	662
4:45 PM	10	243	1	34	180	9	21	13	22	23	12	54	622
5:00 PM	15	240	6	30	219	7	19	9	19	14	23	67	668
5:15 PM	9	209	6	34	206	5	12	13	17	11	14	61	597
5:30 PM	18	258	3	36	201	7	14	10	25	8	9	62	651
5:45 PM	17	253	1	23	207	14	16	7	10	6	19	80	653
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 110	NT 1892	NR 29	SL 252	ST 1606	SR 65	EL 133	ET 93	ER 162	WL 90	WT 132	WR 492	TOTAL 5056

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	58	961	13	134	806	32	80	49	87	57	71	252	2600
PEAK HR. FACTOR:		0.989			0.949			0.900			0.913		0.973

CONTROL: SIGNALIZED 1

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Via Ararat DATE: 1/5/2005 LOCATION: City of Bonsall

E-W STREET: W. Lilac DAY: WEDNESDAY PROJECT# 04-4443-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0		3	1			1	40	0	0	51	0	96
7:15 AM	5		4	1			0	71	3	1	68	0	153
7:30 AM	0		2	0			0	22	1	0	18	0	43
7:45 AM	1		1	0			0	8	0	0	10	0	20
8:00 AM	0		3	0			0	14	0	0	9	0	26
8:15 AM	0		1	1			0	5	0	2	5	1	15
8:30 AM	1		0	0			0	16	0	0	18	0	35
8:45 AM	1		1	1			0	12	3	0	20	0	38
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	8	0	15	4	0	0	1	188	7	3	199	1	426
PEAK VOLUMES =	6	0	10	2	0	0	1	141	4	1	147	0	312
PEAK HR. FACTOR:		0.444			0.500			0.493			0.536		0.510

AM Peak Hr Begins at: 700 AM

CONTROL: Implied Stop(NS)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Via Ararat DATE: 1/5/2005 LOCATION: City of Bonsall

E-W STREET: W. Lilac DAY: WEDNESDAY PROJECT# 04-4443-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	1		1				0	13	2	1	6	0	24
4:15 PM	1		2				0	10	2	2	10	2	29
4:30 PM	0		2				0	9	0	1	8	0	20
4:45 PM	0		1				0	5	2	2	9	0	19
5:00 PM	0		1				0	11	3	0	13	0	28
5:15 PM	0		0				1	4	1	1	8	0	15
5:30 PM	0		3				0	6	1	1	10	0	21
5:45 PM	0		1				0	6	0	1	13	0	21
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES =	2	0	11	0	0	0	1	64	11	9	77	2	177

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	1	0	6	0	0	0	0	35	7	5	40	2	96
PEAK HR. FACTOR:		0.583			0.000			0.750			0.839		0.828

CONTROL: Implied Stop(NS)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Aqueduct Rd DATE: 1/5/2005 LOCATION: City of Bonsall

E-W STREET: W. Lilac DAY: WEDNESDAY PROJECT# 04-4443-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	0	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	2		0					35	0	0	61		98
7:15 AM	1		2					81	0	0	48		132
7:30 AM	3		0					11	0	1	13		28
7:45 AM	0		0					10	0	1	11		22
8:00 AM	0		1					9	0	0	9		19
8:15 AM	0		0					10	1	0	17		28
8:30 AM	0		0					5	1	3	20		29
8:45 AM	0		0					14	1	0	7		22
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 6	NT 0	NR 3	SL 0	ST 0	SR 0	EL 0	ET 175	ER 3	WL 5	WT 186	WR 0	TOTAL 378

AM Peak Hr Begins at: 700 AM

PEAK VOLUMES =	6	0	2	0	0	0	0	137	0	2	133	0	280
PEAK HR. FACTOR:		0.667			0.000			0.423			0.553		0.530

CONTROL: Implied Stop, (NB)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Aqueduct Rd DATE: 1/5/2005 LOCATION: City of Bonsall

E-W STREET: W. Lilac DAY: WEDNESDAY PROJECT# 04-4443-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	0	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM								9	2		6		19
4:00 PM			2					13	0		12		26
4:15 PM			1					17	0		8		26
4:30 PM			1					9	0		10		19
4:45 PM			0					6	0		9		16
5:00 PM			1					8	0		6		14
5:15 PM			0					8	0		6		16
5:30 PM			2					6	0		8		17
5:45 PM			3										
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 0	NT 0	NR 10	SL 0	ST 0	SR 0	EL 0	ET 76	ER 2	WL 0	WT 65	WR 0	TOTAL 153

PM Peak Hr Begins at: 400 PM

PEAK VOLUMES =	0	0	4	0	0	0	0	48	2	0	36	0	90
PEAK HR. FACTOR:		0.500			0.000			0.735			0.750		0.865

CONTROL: Implied Stop, (NB)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Old Hwy 395 DATE: 9/14/2004 LOCATION: City of Fallbrook

E-W STREET: W. Lilac RD DAY: TUESDAY PROJECT# 04-4277-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	2	0	0	1	0	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	15	16	1	0	71	74	20	2	14	3	2	5	223
7:15 AM	8	14	2	0	64	22	35	1	16	4	1	5	172
7:30 AM	8	9	2	0	42	6	5	1	11	4	3	5	96
7:45 AM	5	10	3	5	62	12	4	2	9	3	3	3	121
8:00 AM	2	6	1	3	39	10	5	0	6	2	4	2	80
8:15 AM	4	10	2	2	36	18	7	1	5	2	1	0	88
8:30 AM	5	12	2	1	31	33	7	1	4	1	0	1	98
8:45 AM	4	11	2	2	28	2	5	1	7	2	1	1	66
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	51	88	15	13	373	177	88	9	72	21	15	22	944

AM Peak Hr Begins at: 700 AM

PEAK VOLUMES =	36	49	8	5	239	114	64	6	50	14	9	18	612
PEAK HR. FACTOR:		0.727			0.617			0.577			0.854		0.686

CONTROL: 2waystop(EB&WB)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Old Hwy 395 DATE: 9/14/2004 LOCATION: City of Fallbrook

E-W STREET: W. Lilac RD DAY: TUESDAY PROJECT# 04-4277-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	0	1	2	0	0	1	0	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	7	52	11	8	30	9	13	0	8	8	2	2	150
4:15 PM	10	36	4	4	16	7	7	4	10	5	4	4	111
4:30 PM	8	29	7	4	26	9	4	1	10	9	0	3	110
4:45 PM	3	36	7	5	18	8	6	0	3	6	1	2	95
5:00 PM	8	35	4	4	14	1	6	1	4	5	0	1	83
5:15 PM	8	41	4	5	17	4	6	4	1	0	0	3	93
5:30 PM	8	39	13	3	21	11	8	1	5	5	1	5	120
5:45 PM	11	29	6	1	18	7	2	0	4	1	0	5	84
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 63	NT 297	NR 56	SL 34	ST 160	SR 56	EL 52	ET 11	ER 45	WL 39	WT 8	WR 25	TOTAL 846

PM Peak Hr Begins at: 400 PM

PEAK VOLUMES =	28	153	29	21	90	33	30	5	31	28	7	11	466
PEAK HR. FACTOR:		0.750			0.766			0.786			0.885		0.777

CONTROL: 2waystop(EB&WB)

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: I-15 SB Ramps DATE: 9/9/2004 LOCATION: City of Fallbrook

E-W STREET: Old Hwy 395 DAY: THURSDAY PROJECT# 04-4277-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	0	1	0	1	1	1	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM				14	0	2		29	47	4	24		120
7:15 AM				21	0	2		33	58	1	17		132
7:30 AM				11	0	1		22	51	2	22		109
7:45 AM				15	1	2		24	39	1	26		108
8:00 AM				12	0	1		17	37	4	19		90
8:15 AM				8	1	0		19	23	3	23		77
8:30 AM				12	0	1		27	22	3	25		90
8:45 AM				12	0	2		21	30	2	19		86
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 105	ST 2	SR 11	EL 0	ET 192	ER 307	WL 20	WT 175	WR 0	TOTAL 812

AM Peak Hr Begins at: 700 AM

PEAK VOLUMES =	0	0	0	61	1	7	0	108	195	8	89	0	469
PEAK HR. FACTOR:		0.000			0.750			0.832			0.866		0.888

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: I-15 SB Ramps DATE: 9/9/2004 LOCATION: City of Fallbrook

E-W STREET: Old Hwy 395 DAY: THURSDAY PROJECT# 04-4277-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	0	1	0	1	1	1	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM				20		5		13	17	3	47		105
4:15 PM				18		3		17	24	1	52		115
4:30 PM				19		7		20	35	1	55		137
4:45 PM				21		7		13	26	2	66		135
5:00 PM				17		6		22	22	4	70		141
5:15 PM				13		5		19	21	4	48		110
5:30 PM				19		1		15	24	7	59		125
5:45 PM				15		2		12	28	6	51		114
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 0	NT 0	NR 0	SL 142	ST 0	SR 36	EL 0	ET 131	ER 197	WL 28	WT 448	WR 0	TOTAL 982

PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	0	0	0	75	0	23	0	72	107	8	243	0	528
PEAK HR. FACTOR:		0.000			0.875			0.814			0.848		0.936

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: I-15 NB Ramps DATE: 9/9/2004 LOCATION: City of Fallbrook

E-W STREET: Old Hwy 395 DAY: THURSDAY PROJECT# 04-4277-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0	1	0	0	0	0	1	1	0	1	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	18		1					45	1		13	10	88
7:15 AM	12		1					42	4		9	11	79
7:30 AM	14		0					36	0		12	16	78
7:45 AM	13		2					23	2		14	9	63
8:00 AM	14		1					26	1		9	8	59
8:15 AM	20		3					23	3		6	10	65
8:30 AM	21		3					34	3		7	13	81
8:45 AM	17		4					51	4		5	7	88
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 129	NT 0	NR 15	SL 0	ST 0	SR 0	EL 0	ET 280	ER 18	WL 0	WT 75	WR 84	TOTAL 601

AM Peak Hr Begins at: 700 AM

PEAK VOLUMES =	57	0	4	0	0	0	0	146	7	0	48	46	308
PEAK HR. FACTOR:		0.803			0.000			0.832			0.839		0.875

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: I-15 NB Ramps DATE: 9/9/2004 LOCATION: City of Fallbrook

E-W STREET: Old Hwy 395 DAY: THURSDAY PROJECT# 04-4277-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	0	1	0	0	0	0	1	1	0	1	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	32		3					29	2		19	26	111
4:15 PM	22		2					31	2		33	29	119
4:30 PM	27		5					37	5		28	37	139
4:45 PM	34		3					32	4		31	44	148
5:00 PM	41		6					31	7		33	38	156
5:15 PM	26		4					26	7		27	41	131
5:30 PM	28		9					24	11		41	29	142
5:45 PM	31		8					20	6		25	22	112
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 241	NT 0	NR 40	SL 0	ST 0	SR 0	EL 0	ET 230	ER 44	WL 0	WT 237	WR 266	TOTAL 1058

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	129	0	22	0	0	0	0	113	29	0	132	152	577
PEAK HR. FACTOR:		0.803			0.000			0.934			0.947		0.925

CONTROL: Signalized

- County of San Diego Level of Service Thresholds

SUMMARY OF COUNTY OF SAN DIEGO PUBLIC ROAD STANDARDS[1]

CLASS	CIRCULATION ELEMENT ROAD CROSS SECTIONS									AVERAGE DAILY VEHICLE TRIPS (ADT)				
										LEVEL OF SERVICE (LOS)				
	Median	Traveled way	Shoulder	Parkway strip	Roadbed	RW*	Min. curve radius	Max. grades	Min. design speed (mph)	A Free flow	B Steady flow	C Stable flow	D Approach unstable	E Unstable flow
EXPRESSWAY Divided highway with only selected public road access with full grade separations	34'	36'	10'	10'	126'	146'	1200'	6%	55	<36,000	<54,000	<70,000	<86,000	<100,000
PRIME ARTERIAL Divided highway, signalized intersections, access control, or extra lanes as required	14'	36'	8'	10'	102'	122'	1200'	6%	55	<22,200	<37,000	<44,600	<50,000	<57,000
MAJOR ROAD 4 lane divided road, access & parking controlled as necessary	14'	24'	8'	10'	78'	98'	1200'	7%	55	<14,800	<24,700	<29,600	<33,400	<37,000
COLLECTOR 4 lane undivided road	—	24'	8'	10'	64'	84'	700'	7%	45[2]	<13,700	<22,800	<27,400	<30,800	<34,200
LIGHT COLLECTOR 2 lane undivided road	—	12'	8'	10'	40'	60'	700'	9%	45	<1,900	<4,100	<7,100	<10,900	<16,200
RURAL COLLECTOR 2 lane undivided road, extra R/W allows greater flexibility & upgrade	—	12'	8'	22'	40'	84'	500'	12%	40	<1,900	<4,100	<7,100	<10,900	<16,200
RURAL LIGHT COLLECTOR 2 lane undivided road,decreased "curve radii" standards	—	12'	8'	10'	40'	60'	500'	12%	40	<1,900	<4,100	<7,100	<10,900	<16,200
RURAL MOUNTAIN 2 lane undivided road appropriate only in rural mountain areas	—	12'	8'	30'	40'	100'	500'	12%	40	<1,900	<4,100	<7,100	<10,900	<16,200
RECREATIONAL PARKWAY Recreational routes for travel pleasure purposes	—	12'	8'	30'	40'	100'	400'	12%	25	<1,900	<4,100	<7,100	<10,900	<16,200
NON-CIRCULATION ROADS														
RESIDENTIAL COLLECTOR	—	12'	8'	10'	40'	60'	300'	12%	30	<4,500	Levels of service are not applied to non-circulation roads since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors. Not all non-circulation road classifications are shown			
RESIDENTIAL STREET	—	12'	6'	10'	36'	56'	200'	15%	30	<1,500				
RESIDENTIAL LOOP/CUL DE SAC	—	12'	4'	10'	32'	52'	200'	15%	30	<200				

*Additional pavement and R/W may be required on C & I Collectors and I1 Collectors in Industrial/Commercial Zones, 4 and 12 ft. respectively. C & I roads needing additional lanes require an additional 12 to 14 ft. of pavement and R/W but exclusive C & I roads designated with Bike Lanes will require an additional 10 ft. of pavement and R/W.

[1] For full standards, refer to Public Road Standards, adopted by the Board of Supervisors on 2/26/92

TABLE 1

AVERAGE DAILY VEHICLE TRIPS

CIRCULATION ELEMENT ROADS		LEVEL OF SERVICE				
CLASS	X-SECTION	A	B	C	D	E
Expressway	126/146	<36,000	<54,000	<70,000	<86,000	<108,000
Prime Arterial	102/122	<22,200	<37,000	<44,600	<50,000	<57,000
Major Road	78/98	<14,800	<24,700	<29,600	<33,400	<37,000
Collector	64/84	<13,700	<22,800	<27,400	<30,800	<34,200
Town Collector	54/74	<3,000	<6,000	<9,500	<13,500	<19,000
Light Collector	40/60	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Collector	40/84	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Light Collector	40/60	<1,900	<4,100	<7,100	<10,900	<16,200
Recreational Parkway	40/100	<1,900	<4,100	<7,100	<10,900	<16,200
Rural Mountain	40/100	<1,900	<4,100	<7,100	<10,900	<16,200

NON – CIRCULATION ELEMENT ROADS		LEVEL OF SERVICE				
CLASS	X-SECTION	A	B	C	D	E
Residential Collector	40/60	*	*	<4,500	*	*
Residential Road	36/56	*	*	<1,500	*	*
Residential Cul-de-sac or Loop Road	32/52	*	*	< 200	*	*

*Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

County of San Diego

- Excerpts from the County's Private Road Standards

SAN DIEGO COUNTY
STANDARDS FOR PRIVATE ROADS

COUNTY OF SAN DIEGO
DEPARTMENT OF PUBLIC WORKS

ARTICLE III

IMPROVEMENT & DESIGN STANDARDS

Section 3.1 DESIGN STANDARDS

Roads shall be designed and improved in conformance with the following:

A) Where offers of dedication are to be accepted, the roads shall be designed and constructed in conformance with "COUNTY STANDARDS" corresponding to the road classification required.

B) Where offers of dedication are not to be accepted, the roads shall be designed and constructed in conformance with the following minimum standards:

NUMBER OF VEHICLE TRIPS PER DAY (ADT)

	750 or Less	751-2500
Graded Width	32ft.[1]	32ft.[1]
Improvement Width	24ft.[1]	24ft.[1]
Horizontal Radius	200ft.	300ft.
Vertical Design Speed	25 MPH	30 MPH
Maximum Grade	15%	15%
Minimum Length-Vertical Curve	40'	40'
Maximum Angle of Departure	7%[2]	7%[2]
Minimum Vertical Clearance	14.5"	14.5"

1 Based upon input from the local fire protection district, community planning and/or sponsor groups and the general public, the Director of Public Works may require that on-street parking be provided on roads serving areas with a minimum lot size of less than one (1) acre. Whenever on-street vehicle parking is required, on-street parking shall be provided by increasing the graded and improved width by six feet (6') for each side of the road in which on-street parking is to be provided in accordance with Sections 81.402 of Chapter 4, and 81.703 of Chapter 7, of the County Subdivision Ordinance. In order to accommodate on-street parking, the Director of Public Works may also, on a case by case basis, authorize the use of parking bays or mountable curbs (berms) in lieu of additional road widening. Where parking bays are provided, they shall be located to best accommodate the parking demand. Landscaping and/or curbing may be provided between parking bays provided that they will not obstruct required sight distance and/or restrict ingress and/or egress to and from the parking bays. In order to designate no-parking areas, striping and/or appropriate signage may be required.

2 The angle of departure is the smallest angle made between the road surface and a line drawn from the front point of the ground contact of the front tire for a pumper fire apparatus (as per Standard NFPA 1901) to any projection of the apparatus in front of the front axle. The angle of approach affects the road clearance of the vehicle when going over short steep grades such as found in a driveway entrance or crossing a high crowned road at right angles. Too low an angle of approach will result in scraping the apparatus body.

C) Where no dedications, offers of dedication, or irrevocable offers of dedication are required, the roads shall be designed and constructed to the following minimum standards:

NUMBER OF VEHICLE TRIPS PER DAY (ADT)

	100 or Less	101-750	751-2500
Graded Width	28ft.[2,3]	28 ft.[2,3]	28ft.[2,3]
Improvement Width	24ft.[1,2]	24ft.[1,2]	24ft.[1,2]
Horizontal Radius	100ft.[1]	150ft.[1]	200ft.[1]
Vertical Design Speed	20 MPH[1]	25 MPH[1]	30 MPH[1]
Maximum Grade	20%	20%	20%
Minimum Length-Vertical Curve	40'	40'	40'
Maximum Angle of Departure	7%[1]	7%[4]	7%[4]
Minimum Vertical Clearance	14.5"	14.5"	14.5"

D) Where it is determined that the number of trips per day on a particular road will exceed 2500 the Director of Public Works may require that the road be dedicated and improved in conformance with the "COUNTY OF SAN DIEGO PUBLIC ROAD STANDARDS".

1 May be reduced upon approval of the Director of Public Works. In such cases, the vertical design speed and the horizontal radius of curvature shall be a minimum of 15 MPH and a 60-foot horizontal radius, respectively.

2 Based upon input from the local fire protection district, community planning and/or sponsor groups and the general public, the Director of Public Works may require that on-street parking be provided on roads serving areas with a minimum lot size of less than one (1) acre. Whenever on-street vehicle parking is required, on-street parking shall be provided by increasing the graded and improved width by six feet (6') for each side of the road in which on-street parking is to be provided in accordance with Sections 81.402 of Chapter 4, and 81.703 of Chapter 7, of the County Subdivision Ordinance. In order to accommodate on-street parking, the Director of Public Works may also, on a case by case basis, authorize the use of parking bays or mountable curbs (berms) in lieu of additional road widening. Where parking bays are provided, they shall be located to best accommodate the parking demand. Landscaping and/or curbing may be provided between parking bays provided that they will not obstruct required sight distance and/or restrict ingress and/or egress to and from the parking bays. In order to designate no-parking areas, striping and/or appropriate signage may be required.

3 The graded width for on-site and off-site roads may be reduced, at the discretion of the Director of Public Works. However, the graded width shall not be less than the required improvement width as required by these standards.

4 The angle of departure is the smallest angle made between the road surface and a line drawn from the front point of the ground contact of the front tire for a pumper fire apparatus (as per Standard NFPA 1901) to any projection of the apparatus in front of the front axle. The angle of approach affects the road clearance of the vehicle when going over short steep grades such as found in a driveway entrance or crossing a high crowned road at right angles. Too low an angle of approach will result in scraping the apparatus body.

E) Where offers of dedication or irrevocable offers of dedication have been granted, the road shall be constructed on the centerline of such dedication.

F) All private roads shall be surfaced with asphaltic concrete over an aggregate base, except for private roads serving properties which are designated #18, #20, #23 or #24 on the County General Plan or serving an agricultural subdivision. The above private roads, which are not required to be surfaced with asphaltic concrete, shall be surfaced with a minimum of 6 inches of disintegrated granite.

Section 3.2 GENERAL REQUIREMENTS

A) Grading beyond the minimum graded width may be required to provide for adequate sight distance (See Section 3.2.H).

B) Where disintegrated granite (D.G.) surfacing is allowed, AC/AB in conformance with Section 3.11 of these standards shall be required where the road grades are 8.0% or greater, or under 1.0%.

C) The structural section shall be designed in conformance with Section 3.11 of these Standards.

D) RIGHT-OF-WAY RETURNS

1) The radii for right-of-way returns at the intersection of a private road with a public road or future public roads shall be a minimum 20 feet.

2) Where the angle of intersection of easement right-of-way lines is other than 90 degrees, or where a sight distance problem may be anticipated, an increased right-of-way line radius may be required.

E) STREET KNUCKLE ALLOWED

1) In any road dedicated, offered for dedication, or irrevocably offered for dedication, street knuckles may be used in accordance with County of San Diego Public Road Standards and San Diego County Design Standard Number DS-15.

2) Where no dedication, offer of dedication, or irrevocable offer of dedication is required, street knuckles may be used on a case by case basis.

F) MAXIMUM GRADE ALLOWED

Where no dedication, offer of dedication or irrevocable offer of dedication is required, the maximum gradient should not exceed 20.0%. Grades above 15% may also require mitigation from the local fire protection district, which will be enforced by the local fire authority. Based upon existing road conditions, topography, placement of existing utilities, environmental constraints and/or other pertinent factors the Director of Public Works may authorize a steeper grade (for a specified length), provided the maximum grade does not exceed 25%. Prior to any authorization, however, the Director shall obtain input from the local fire protection district.

G) SIGHT DISTANCE

1) Intersections of private roads with existing public roads (including those roads in which dedications and/or irrevocable offers of dedication have been offered)

a) Sight distance requirements at all intersections of private roads with public roads, shall conform to the intersectional sight distance criteria as provided below:

DISTANCE AT INTERSECTIONS	STANDARD CORNER SIGHT
Design Speed, MPH	Minimum Corner Intersection Sight Distance in Feet*
20	200
30	300
40	400
50	500
60	600

* Corner sight distance measured from a point on the minor road at least 10 feet from the edge of the major road pavement and measured from a height of eye of 3.5 feet on the minor road to a height of object of 4.25 feet on the major road. San Diego County Design Standards DS-20A and DS 20B shall also apply. The design speed used to determine the minimum sight distance requirement shall be the greater of the current prevailing speed (if known) and the minimum design speed of the respective road classification shown in Table 2 of the County of San Diego Public Road Standards

b) The line of sight shall be entirely within the dedications, or irrevocable offers of dedications provided, or, if there are no offers of dedication required, within the private easements provided.

2) Intersections of private roads with private roads

a) Engineer shall use appropriate engineering judgement to determine the appropriate corner sight distance. As a minimum, corner sight distance shall be provided in accordance with the stopping sight distance as determined by the American Association of State highway Officials (AASHTO) in the publication "A Policy on Geometric Design of Highways and Streets" dated 1984.

3) Modifications

The above sight distance standards will be applicable to the vast majority of cases, but they are not inflexible rules to which there is no modification. Occasionally, the Board of Supervisors or Director of Public Works may make modifications where the application of the standards is impractical or results in unreasonable hardship, such as to account for existing intersections which have been designed and constructed according to previous standards. Procedures for processing a modification request are provided in Section 1.4.

H) ROAD INTERSECTIONS

1) Intersections of private roads with a public non-Circulation Element road shall be offset at least 200 feet from the nearest adjacent road (measured centerline to centerline).

2) Intersections of private roads with roads shown on the Circulation Element of the San Diego County General Plan shall be offset at least 300 feet from the nearest adjacent road measured (centerline to centerline).

3) The angle between centerlines of an intersecting private road with a public road shall be as nearly a right angle as possible, but in no case less than 70 degrees or greater than 110 degrees. Where the angle between the centerlines is between 70 and 80 degrees or between 100 and 110 degrees, there shall be required on the acute angle corner of the intersection a taper to accommodate right-hand turning movements. Said taper shall be set back 5 feet at the exiting point of the curb return and extend 40 feet in such a manner as to safely allow completion of the right-hand turning movement.

I) ROAD NAME SIGNS

All private roads within major subdivisions and private roads serving four or more parcels shall be named. The developer shall install one road name sign at each intersection as a part of the improvements. Installation shall be in accordance with San Diego County Design Standard Number DS-13.

J) LIGHTING REQUIREMENTS

All development projects shall be required to transfer to Zone A of the San Diego County Street Lighting District, irrespective of roadway lighting requirements.

Section 3.3 CUL-DE-SACS/TURNAROUNDS

Cul-de-sacs or approved turnarounds shall be required at the end of all private roads except where the road will ultimately serve no more than 2 residences and the length of the private road is 150 feet or less.

➢ Excerpts from the *Public Facilities Element*

Part XII
Public Facility Element

San Diego County General Plan

Adopted
March 13, 1991
GPA 90-FE
Amended
June 10, 1992
GPA92-FE1

This Element was partially funded through the Community Development Block Grant program

ISSUES

1. Increases in the amount of automobile use have resulted in increased congestion on the region's roadways.

   Discussion: The dramatic rise in automobile use has far surpassed the ability of the County and other jurisdictions to upgrade and maintain the highway and road system. As the number of vehicles on the roadways has increased, the expansion of existing roadways and the construction of new roadways has not kept pace. Between 1978 and 1988, automobile registrations increased by 64% while increases in local street and road mileage only rose by 16%. As a result, certain roadways are functioning at a Level of Service "E" or "F" on a routine basis.

   A LOS "C", which allows for stable traffic flow with room to maneuver, is a generally accepted level to strive for in new development. At this level, traffic generally flows smoothly, although freedom to maneuver within the roadway is somewhat restricted and lane changes require additional care.

   However, there are some cases where development cannot achieve a LOS "C" on off-site roadways. For instance, there are areas where the existing development pattern precludes the addition of lanes or other mitigation or when the community is opposed to certain improvements to maintain a LOS "C". Additionally, there are existing roadways in the County that are currently operating below a LOS "C". Such cases are currently exceptions and generally occur when there is insufficient right-of-way to expand or modify a roadway or when the existing development in the area has generated more traffic than anticipated. In these cases a Level of Service "D" is acceptable on off-site roadways. At this level, small increases in flow cause substantial deterioration in service. Freedom to maneuver is limited and minor incidents can cause substantial interruption in the traffic flow.

   When the roadway system reaches a LOS "E" or "F", or new development would push it to LOS "E" or "F", new development should not be approved unless the project can mitigate the LOS "E" or contribute a fair share to a program to mitigate the project's impacts, unless a statement of overriding findings can be made.

   In order to control the amount of traffic on the roadways, and subsequently the amount of congestion, it is necessary to apply the LOS measurement to all roads that are impacted by a proposed project. The effect of a project on the road system varies from project to project. Due to the size and type of project, the type and capacity of roads serving the project, the amount of traffic generated by the development and the existing development pattern, the impact will vary from one project to another. To apply a LOS standard to only major or larger capacity roads or to within a specified geographic distance of a project could result in an inadequate review of the impacts of a project and create the potential for increased congestion. Therefore, project impacts should be assessed on a case-by-case basis.

GOAL

A SAFE, CONVENIENT, AND ECONOMICAL INTEGRATED TRANSPORTATION SYSTEM INCLUDING A WIDE RANGE OF TRANSPORTATION MODES.

OBJECTIVE 1:

A Level of Service "C" or better on County Circulation Element roads.

Policy 1.1: New development shall provide needed roadway expansion and improvements on-site to meet the demand created by the development, and to maintain a Level of Service "C" on Circulation Element Roads during peak traffic hours. New development shall provide off-site improvements designed to contribute to the overall achievement of a Level of Service "D" on Circulation Element Roads.

Implementation Measure 1.1.1: Review all development proposals to determine both their short-term and long-term impacts on the roadway system. The area of impact will be determined based on the size, type and location of the project; the traffic generated by the project; and the existing circulation and development pattern in the area. [DPW, DPLU]

Implementation Measure 1.1.2: Require, as a condition of approval of discretionary projects, improvements or other measures necessary to mitigate traffic impacts to avoid reduction in the existing Level of Service below "C" on on-site Circulation Element roads. [DPLU, DPW]

Implementation Measure 1.1.3: Require, as a condition of approval of discretionary projects which have a significant impact on roadways, improvements or other measures necessary to mitigate traffic impacts to avoid reduction in the existing Level of Service below "D" on off-site and on-site abutting Circulation Element roads. New development that would significantly impact congestion on roads at LOS "E" or "F", either currently or as a result of the project, will be denied unless improvements are scheduled to increase the LOS to "D" or better or appropriate mitigation is provided . Appropriate mitigation would include a fair share contribution in the form of road improvements or a fair share contribution to an established program or project. If impacts cannot be mitigated, the project will be denied unless a specific statement of overriding findings is made pursuant to Section 15091(b) and 15093 of the State CEQA Guidelines. [DPLU, DPW]

Implementation Measure 1.1.4: Whenever possible on development proposals, require that access to parcels adjacent to roads shown on the Circulation Element be limited to side streets in order to maintain through traffic flow. [DPW, DPLU]

- Excerpts from the County's *Guidelines for Determining Significance*

Part XV-A

Transportation/Traffic

Traffic

County of San Diego

Guidelines for Determining Significance

Adopted,

2.3 Regional and Local Traffic Impact Analysis Guidelines

San Diego Traffic Engineers' Council (SANTEC) and the Institute of Traffic Engineers (ITE)

The San Diego Traffic Engineers' Council (SANTEC) and the local chapter of the Institute of Traffic Engineers (ITE) have endorsed for use the "Guidelines of Traffic Impact Studies (TIS) in the San Diego Region." These guidelines were prepared by a traffic subcommittee formed by SANDAG. The purpose of the subcommittee was to develop a model set of guidelines for the analysis of traffic impacts for adoption and use by the various jurisdictions in the San Diego region. The goal was to foster more consistency in the assessment of traffic impacts in the San Diego region. These guidelines establish a LOS target of LOS D. Impacts would be identified for those projects that significantly increase the volume and or delay at intersections and road segments operating below LOS D (i.e. at LOS E of LOS F) either prior to or as a result of the proposed project. These guidelines have not been formally adopted by SANDAG or local jurisdictions, but are currently being used as a guideline by many local traffic-engineering consultants in the preparation of traffic impact studies in the San Diego Region.

California Department of Transportation (Caltrans)

The California Department of Transportation (Caltrans) has prepared a "Guide for the Preparation of Traffic Impact Studies." Objectives for the preparation of this guide include providing consistency and uniformity in the identification of traffic impacts generated by local land use proposals. In terms of level of service, "Caltrans endeavors to maintain a target LOS at the C/D cusp on State highway facilities. However, Caltrans acknowledges that this may not always be feasible. In these circumstances, Caltrans may consider setting the target LOS at the D/E cusp."

City of San Diego

The City of San Diego has prepared a "Traffic Impact Study Manual." The purpose is to provide guidelines to consultants on how to prepare traffic impact studies in the City of San Diego and to ensure consistency on the preparation of these studies. Impacts are identified if the proposed project will increase the traffic volume on a road segment above an identified allowable increase. The better the initial level of service on the road segment, the higher the allowable volume increase.

3.0 TYPICAL ADVERSE EFFECTS

Typical traffic related impacts are most often associated with traffic congestion on local roads and the regional circulation network. As the San Diego region grows, the number of vehicle trips that are generated by residents also grows. Historically, vehicle trips have been increasing at a faster rate than that of the population growth. It is forecasted that more than 23 million vehicle trips would be made in this region each weekday by the year 2020. The automobile is expected to remain the primary method of travel in the region, but new and widened freeways, increased trolley and bus service, better rail service, and additional highway improvements would alleviate some of the traffic

congestion. SANDAG's 2020 RTP details some of the regional improvements that are projected to occur within a twenty-year time frame. Impacts associated with traffic, pedestrian and bicycle safety are most often addressed at the project level.

4.0 GUIDELINES FOR DETERMINING SIGNIFICANCE

This section provides guidance for evaluating adverse environmental effects a project may have on traffic. The guidelines for determining significance are organized into six subject areas: direct vs. cumulative, road segments, intersections, ramps, hazards due to a design feature, and hazards to pedestrians and/or bicyclists.

4.1 Direct vs. Cumulative Impacts

The California Environmental Quality Act (CEQA) Guidelines states that environmental assessments must take in account the "whole of the action" involved, including on-site, off-site, construction, and operational impacts. Also, the environmental assessment must evaluate project-level and cumulative impacts, including direct and indirect impacts.

4.1.1 Direct

Direct impacts are impacts that would result solely from the implementation of the project. Since CEQA requires a plan to ground assessment, direct impacts are typically evaluated based upon a comparison of the existing plus project scenario to the existing scenario. When opening day and/or a phased scenario is planned, additional comparisons may also be made to determine significance. Where it can be demonstrated that other projects will reasonably come on-line prior to development of the proposed project, an opening day assessment scenario may be used in lieu of the existing plus project approach. Coordination with County staff is recommended to ensure that proper assumptions are used in the preparation of this assessment scenario. Direct impacts would occur when the significance criteria outlined herein is exceeded.

4.1.2 Cumulative

CEQA section 15130 provides guidance for assessment of cumulative impacts. Per this section, CEQA states that cumulative impact assessments should be based upon 1) a list of past, present and probable future projects producing related or cumulative impacts, (includes all projects and if necessary, those projects outside the control of the agency), or 2) a summary of projects contained in an adopted general plan or related planning document, or in a prior certified/adopted environmental document which described or evaluated regional or area wide conditions contributing to the cumulative impact. For most projects, the list of past, present and probable projects approach is used for the assessment of cumulative impacts.

For projects that will be implemented and constructed in the near term, the "list of projects" approach is typically used in the assessment and evaluation of cumulative impacts. The assessment of cumulative projects can also be based upon a summary of projections contained within an adopted General Plan or related planning documents. This is typically used when the project includes a change to the County's General Plan or Zoning Ordinance. Projects that include both a change to near term development and the County's General Plan or Zoning may be required to provide both levels of evaluation.

Section 15130(a) of the State CEQA Guidelines state that cumulative impacts of a project should be discussed when the project impacts, even though individually limited, are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. In evaluating cumulative traffic impacts two conditions must be evaluated: 1) will build-out of all near term projects result in a cumulative traffic impact and 2) does the amount of traffic generated by the individual proposed project contribute (even in a small part) to that cumulative impact. Both conditions must be met for an individual project to result in a cumulative traffic impact.

Cumulative traffic impacts are typically evaluated based upon a comparison of the near-term cumulative projects plus proposed project scenario (list of projects) to the existing scenario. If the traffic generated and/or redistributed from all the near term projects would result in a cumulative traffic impact then condition one is met. Condition two is evaluated based upon the traffic generated or redistributed by the proposed project and the list of projects onto a particular road segment and/or intersection. If the total amount of traffic generated and/or redistributed exceeds the values provided in Table 1, then the traffic would be considered cumulatively considerable and the individually proposed project would result in a cumulative traffic impact.

4.2 Road Segments

Exceedance of the following significance guidelines will be considered substantial evidence that private development and public improvement projects will have a significant traffic volume and/or level of service traffic impact on a road segment if:

- ***The additional or redistributed ADT generated by the proposed project will cause an adjacent or nearby County Circulation Element Road to operate below LOS D and will significantly increase congestion as identified in Table 1, and/or***
- ***The additional or redistributed ADT generated by the proposed project will cause a residential street to exceed its design capacity, and/or***

- ***The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a Circulation Element Road, State Highway or intersection currently operating at LOS E or LOS F as identified in Table 1.***

Table 1

Measures of Significant Project Impacts to Congestion
Allowable Increases on Congested Roads and Intersections

Road Segments

	2-LANE ROAD	4-LANE ROAD	6-LANE ROAD
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT

Intersections

	SIGNALIZED	UNSIGNALIZED
LOS E	Delay of 2 seconds	20 peak hour trips on a critical movement
LOS F	Delay of 1 second, or 5 peak hour trips on a critical movement	5 peak hour trips on a critical movement

Note: A critical movement is one that is experiencing excessive queues.
Note: By adding proposed project trips to all other trips from a list of projects, these same tables are used to determine if total cumulative impacts are significant. If cumulative impacts are found to be significant, each project that contributes any trips must mitigate a share of the cumulative impacts.
Note: The County may also determine impacts have occurred on roads even when a project's traffic or cumulative impacts do not trigger an unacceptable level of service, when such traffic uses a significant amount of remaining road capacity.

The County of San Diego Public Road Standards include a table which establishes levels of service for County Circulation Element roads based upon average daily trips. This table shall be used in determining the level of service for County Circulation Element roads. The Highway Capacity Manual (HCM) includes analysis criteria for the assessment of the level of service for two-lane highways. The Director of Public Works may, based upon a review of the operational characteristics of the roadway, designate that a HCM analysis be used to determine the level of service for a two-lane County arterial in lieu of the level of service table provided in the County of San Diego Public Road Standards.

In determining the level of service for road segments and intersections outside of the County of San Diego's jurisdiction, the level of service standards for the jurisdiction or agency (Caltrans) shall be used. Early coordination with the affected jurisdiction and/or agency (Caltrans) should be conducted during the preparation of the traffic impact study.

Capacity is related to level of service. The capacity of a facility is the maximum number of persons or vehicles that can be expected to traverse a point or uniform section of road within a specified time frame under prevailing roadway, traffic and control conditions. The LOS E/LOS F threshold is identified as the capacity of the facility (roadway or intersection). Volume to capacity ratios are calculated based upon this capacity (LOS E/LOS F) threshold.

Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots and not to carry through traffic. Congestion from the driver's perspective is typically not a concern. Compatibility of the traffic volumes on the local street in relation to the adjacent uses, however, may be an issue of concern. Recommended design capacities for residential non-Circulation Element streets are provided in the San Diego County Public Road Standards. For projects that will substantially increase traffic volumes on residential streets, a comparison of the traffic volumes on the residential streets with the recommended design capacity shall be provided.

The impact significance guidelines for road segments provided in Table 1 are based upon a general assessment and average conditions. These guidelines are based upon an assumed allowable 200 average daily trip (ADT) threshold per vehicle lane. Conservatively under worse case assumption this would be applied unidirectionally (project traffic only being assigned to one-side of the road). Using SANDAG's "Brief Guide for Vehicular Traffic Generation Rates for the San Diego Region" for most discretionary projects this would convert to less than 25 AM or PM peak hour trips. On average, during peak hour conditions, this would be only one additional car every 2.4 minutes. The addition of 200 ADT would, in most cases, not be noticeable to the average driver. Under extremely congested LOS F conditions, small changes and disruptions to the traffic flow can significantly affect traffic operations. Additional project traffic could increase the likelihood and/or frequency of these events. The allowable LOS F ADT threshold was, therefore, set at 50% of the LOS E threshold to provide a higher level of assurance that the traffic allowed under the threshold would not significantly impact traffic operation on the road segment.

For smaller discretionary projects, without controversy, the use of these guidelines is likely to be sufficient. For large projects, controversial projects and/or projects which are preparing Environmental Impact Reports, more detailed evaluations to verify the applicability of the significance thresholds for the individual project conditions may be necessary. Additional evaluations may include analysis of vehicle headways, speeds, average gaps, queues, delay, and/or other factors.

Projects that must prepare a CMP analysis, should also follow the CMP and SANTEC/ITE traffic impact analysis guidelines. A summary of these guidelines is provided in Table 2.

Table 2

Measure of Significant Project Traffic Impacts for Circulation Element Roads, Signalized Intersections, and Ramps

Level of Service With Project	Allowable Change due to Project Impact						
	Freeways		Roadway Segments*		Intersections**	Ramps***	Ramps with >15 min. delay
	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec.)	Delay (min.)	Delay (min.)
E & F	0.01	1	0.02	1	2	-	2

* For County arterials which are not identified in SANDAG's Regional Transportation Plan and Congestion Management Plan as regionally significant arterials, then significance may be measured based upon an increase in average daily traffic. The allowable change (ADT) due to project impacts in this instance would be identified in Table 1.

** Signalized intersections

*** See Attachment E for ramp metering analysis.

KEY
V/C = Volume to Capacity ratio
Speed = Speed measured in miles per hour
Delay = Average stopped delay per vehicle measured in seconds, or minutes
LOS = Level of Service
ADT = Average Daily Trips

4.3 Intersections

This section provides guidance for evaluating adverse environmental effects a project may have on signalized and unsignalized intersections.

4.3.1 Signalized

Exceedance of the following significance guidelines will be considered substantial evidence that private development and public improvement projects will have a significant volume and/or level of service traffic impact on a signalized intersection if:

- ***The additional or redistributed ADT generated by the proposed project will cause a signalized intersection to operate below LOS D and will significantly increase congestion as identified in Table 1, and/or***

- ***The additional or redistributed ADT generated by the proposed project will significantly increase congestion on a signalized intersection currently operating at LOS E or LOS F as identified in Table 1.***

Significance criteria for signalized intersections identified in Table 1 allows an increase in the overall delay at an intersection operating at LOS E of two seconds. An increased wait time of two seconds, on average, would not be noticeable to the average driver. For LOS F conditions, however, a guideline based upon the number of trips added to a critical movement was used. This threshold directly relates to the number of vehicles that can be added to an existing queue that forms at the intersection. A threshold of five trips (peak hour) per critical movement was used. The five trips spread out over the peak hour would not significantly increase the length of an existing queue and would not be noticeable to the average driver.

For smaller discretionary projects, without controversy, the use of these guidelines is likely to be sufficient. For large projects, controversial projects and/or projects which are preparing Environmental Impact Reports, more detailed evaluations to verify the applicability of the significance thresholds for the individual project conditions may be necessary. Additional evaluations may include analysis of vehicle headways, speeds, average gaps, queues, delay, and/or other factors.

4.3.2 Unsignalized

The operating parameters and conditions for unsignalized intersections differ dramatically from those of signalized intersections. Very small volume increases on one leg or turn/thru movement of an unsignalized intersection can substantially affect the calculated delay for the entire intersection. Significance criteria for unsignalized intersections was based upon a minimum overall number of trips added to a critical movement (such as a left turn lane estimated to operate at LOS E of LOS F) at an unsignalized intersection.

Exceedance of the following significance guidelines will be considered substantial evidence that private development and public improvement projects will have a significant volume and/or level of service traffic impact on a unsignalized intersection if:

- ***The proposed project will generate 20 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate below LOS D, or***

- ***The proposed project will generate 20 or more peak hour trips to a critical movement of an unsignalized intersection and the unsignalized intersection currently operates at LOS E, or***

- ***The proposed project will generate 5 or more peak hour trips to a critical movement of an unsignalized intersection, and cause the unsignalized intersection to operate below LOS E, or***

- ***The proposed project will generate 5 or more peak hour trips to a critical movement of an unsignalized intersection and the unsignalized intersection currently operates at LOS F, or***

- ***Based upon an evaluation of existing accident rates, the signal priority list, intersection geometrics, proximity of adjacent driveways, sight distance and/or other factors, it is found that the generation rate less than those specified above would significantly impact the operations of the intersection.***

The significance guidelines for unsignalized intersections set a minimum overall number of trips added to a critical movement at an unsignalized intersection and are supported by significance criteria for unsignalized intersections that are also identified in Table 1. Since the operations of unsignalized intersections under congested conditions are heavily influenced by traffic volume increases on critical moves, the significance guidelines for unsignalized intersections were based upon the number of trips added to a critical move. As stated above, this guideline directly relates to the number of vehicles that can be added to an existing queue that forms at the intersection. A significance guideline of twenty trips (peak hour) per critical movement was used for LOS E conditions. Although delays drivers experience under LOS E condition may be extreme, they are not yet considered unacceptable. The twenty trips spread out over the peak hour would not likely cause the intersection delay and/or existing queue lengths to become unacceptable. The twenty trips (peak hour) would not be noticeable to the average driver. A significance guideline of five trips (peak hour) per critical movement was used for LOS F conditions. The five trips spread out over the peak hour would not significantly increase the length of an existing queue and would not be noticeable to the average driver

A peak hour increase of twenty peak hour trips to the critical movement of an unsignalized intersection would be, on average, one additional car every 3.0 minutes. Assuming the average wait time for a vehicle in the critical movement queue is less than 3.0 minutes, this would not be noticeable to the average driver.

For smaller discretionary projects, without controversy, use of these guidelines is likely to be sufficient. For large projects, controversial projects, and/or projects which are preparing Environmental Impact Reports, more detailed evaluations to verify the applicability of the significance guidelines for the individual project conditions may be necessary. Additional evaluations may include analysis of vehicle headways, speeds, average gaps, queues, delay, and/or other factors.

4.4 Ramps

Additional or redistributed ADT generated by the proposed project will significantly increase congestion at a freeway ramp. Table 2 may be used as a guide in determining significant increases in congestion on ramps. Since the analysis of delays at ramps is still in its infancy these values should not be considered as absolutes. Factors affecting these values may include ramp metering, location (rural vs. urban), ramp design, and the proximity of adjacent intersections. Coordination with Caltrans and the local jurisdiction should be conducted to determine appropriate impact criteria for the specific ramps being assessed.

4.5 Hazards Due to a Design Feature

The following significance guidelines will be considered substantial evidence that a proposed project will have a significant traffic hazard impact due to a design feature. The determination of significance shall be on a case-by-case basis, considering the following factors:

- ***Design features/physical configurations of access roads adversely affect the safe transport of vehicles along the roadway.***
- ***The percentage and/or magnitude of increased traffic on the road due to the proposed project affect the safety of the roadway.***
- ***The physical conditions of the project site and surrounding area, such as curves, slopes, walls, landscaping or other barriers that could result in vehicle conflicts with other vehicles and/or stationary objects.***
- ***The project does not conform to the requirements of the private or public road standards, as applicable.***

4.6 Hazards to Pedestrians and/or Bicyclists

The following significance guidelines will be considered substantial evidence that a proposed project will have a significant traffic hazard impact to pedestrians and/or bicyclists. The determination of significance shall be on a case-by-case basis, considering the following factors:

- ***Design features/physical configurations adversely affect the visibility of pedestrians and/or bicyclists to drivers entering and exiting the site, and the visibility of cars to pedestrians and bicyclists.***
- ***The amount of pedestrian activity at the project access points may adversely affect pedestrian safety.***

- *The project may result in the preclusion or substantial hindrance of the provision of a planned bike lane or pedestrian facility on a roadway adjacent to the project site.*

- *The percentage and/or magnitude of increased traffic on the road due to the proposed project may adversely affect pedestrian and bicycle safety.*

- *The physical conditions of the project site and surrounding area, such as curves, slopes, walls, landscaping or other barriers could result in vehicle/pedestrian, vehicle/bicycle conflicts.*

- *The project does not conform to the requirements of the private or public road standards, as applicable.*

- *The project may result in a substantial increase in pedestrian or bicycle activity without the presence of adequate facilities.*

5.0 GUIDELINES FOR PREPARING A TRAFFIC IMPACT STUDY (TIS)

A thorough traffic analysis will consider all aspects of a project (including all on- and off-site improvements). The analysis should identify whether these impacts are direct, indirect and/or cumulative in nature and determine whether the impacts are significant.

5.1 Overview of a Traffic Impact Study and General Contents

The purpose of a traffic impact study is to evaluate potential individual and cumulative traffic impacts that may result from a proposed project. Substantial increases in traffic volumes on and/or changes to the road network may cause congestion at existing and /or future roads and intersections. A detailed analysis of the traffic generated and/or redirected by a proposed project, assessment of potential impacts, and identification of mitigation measures for significant traffic impacts are the main focus of a traffic impact study.

The analysis of traffic issues, evaluation of traffic impacts, and development of mitigation measures for traffic impacts are complex tasks. The type and scope of a traffic impact study will vary based upon the size of a project, its location and other factors. Typically, a traffic impact study will include several components as outlined in Attachment B and summarized below:

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5.1.1 Existing Conditions

Documentation of the existing traffic volumes, levels of service, and geometrics for roads and intersections that may be potentially impacted by the proposed project must be provided. This assessment is typically based upon traffic counts that are less than two years old, unless it has been demonstrated that traffic volumes have not significantly changed since the prior counts were taken.

APPENDIX B

- Existing Conditions Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.998			0.991	
Flt Protected		0.982			0.982		0.950			0.950		
Satd. Flow (prot)	0	1829	1583	0	1829	1583	1770	1859	0	1770	1846	0
Flt Permitted		0.982			0.982		0.950			0.950		
Satd. Flow (perm)	0	1829	1583	0	1829	1583	1770	1859	0	1770	1846	0
Satd. Flow (RTOR)			198			137		1			3	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	31	54	184	50	85	127	139	943	15	57	802	54
Adj. Flow (vph)	33	58	198	54	91	137	149	1014	16	61	862	58
Lane Group Flow (vph)	0	91	198	0	145	137	149	1030	0	61	920	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						
Total Split (s)	22.0	22.0	22.0	23.0	23.0	23.0	22.0	59.0	0.0	16.0	53.0	0.0
Act Effct Green (s)		11.6	11.6		15.1	15.1	18.0	65.2		12.0	59.2	
Actuated g/C Ratio		0.10	0.10		0.13	0.13	0.15	0.54		0.10	0.49	
v/c Ratio		0.51	0.60		0.63	0.43	0.56	1.02		0.34	1.01	
Control Delay		54.0	11.0		54.7	10.2	56.3	61.9		56.3	63.4	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		54.0	11.0		54.7	10.2	56.3	61.9		56.3	63.4	
LOS		D	B		D	B	E	E		E	E	
Approach Delay		24.5			33.1			61.2			62.9	
Approach LOS		C			C			E			E	
Queue Length 50th (ft)		68	0		108	0	108	~845		45	~705	
Queue Length 95th (ft)		119	69		169	55	179	#1232		90	#1127	
Internal Link Dist (ft)		626			1268			1819			724	
Turn Bay Length (ft)												
Base Capacity (vph)		274	406		296	371	266	1011		177	913	
Starvation Cap Reductn		0	0		0	0	0	0		0	0	
Spillback Cap Reductn		0	0		0	0	0	0		0	0	
Storage Cap Reductn		0	0		0	0	0	0		0	0	
Reduced v/c Ratio		0.33	0.49		0.49	0.37	0.56	1.02		0.34	1.01	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 55.0 Intersection LOS: E
Intersection Capacity Utilization 77.8% ICU Level of Service D
Analysis Period (min) 15

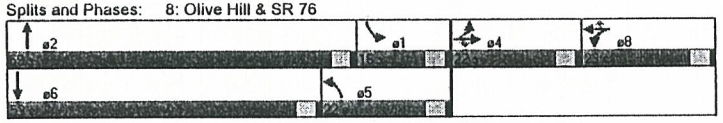
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
5/10/2005

8: Olive Hill & SR 76
Existing AM Peak

Splits and Phases: 8: Olive Hill & SR 76



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R Peaslee/V Haskell
Darnell & Associates, Inc.
Synchro 6 Report

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.998			0.994	
Flt Protected		0.970			0.978		0.950			0.950		
Satd. Flow (prot)	0	1807	1583	0	1822	1583	1770	1859	0	1770	1852	0
Flt Permitted		0.970			0.978		0.950			0.950		
Satd. Flow (perm)	0	1807	1583	0	1822	1583	1770	1859	0	1770	1852	0
Satd. Flow (RTOR)			90			167		1			2	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	80	49	87	57	71	252	58	961	13	134	806	32
Adj. Flow (vph)	82	51	90	59	73	260	60	991	13	138	831	33
Lane Group Flow (vph)	0	133	90	0	132	260	60	1004	0	138	864	0
Turn Type	Split		pm+ov	Split		pm+ov	Prot			Prot		
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases			4			8						
Total Split (s)	24.0	24.0	16.0	23.0	23.0	22.0	16.0	81.0	0.0	22.0	87.0	0.0
Act Effct Green (s)		16.1	32.1		15.8	33.8	12.0	84.0		18.0	90.0	
Actuated g/C Ratio		0.11	0.21		0.11	0.23	0.08	0.56		0.12	0.60	
v/c Ratio		0.69	0.22		0.69	0.53	0.42	0.96		0.65	0.78	
Control Delay		72.8	9.6		74.2	15.5	75.4	52.7		67.6	22.5	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		72.8	9.6		74.2	15.5	75.4	52.7		67.6	22.5	
LOS		E	A		E	B	E	D		E	C	
Approach Delay		47.3			35.2			54.0			28.7	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)		127	0		126	58	57	922		131	293	
Queue Length 95th (ft)		197	46		198	121	108	#1334		m205	924	
Internal Link Dist (ft)		626			1268			1819			724	
Turn Bay Length (ft)												
Base Capacity (vph)		241	410		231	486	142	1042		212	1113	
Starvation Cap Reductn		0	0		0	0	0	0		0	0	
Spillback Cap Reductn		0	0		0	0	0	0		0	0	
Storage Cap Reductn		0	0		0	0	0	0		0	0	
Reduced v/c Ratio		0.55	0.22		0.57	0.53	0.42	0.96		0.65	0.78	

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 85 (57%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 41.3 — Intersection LOS: D
Intersection Capacity Utilization 84.0% — ICU Level of Service E
Analysis Period (min) 15

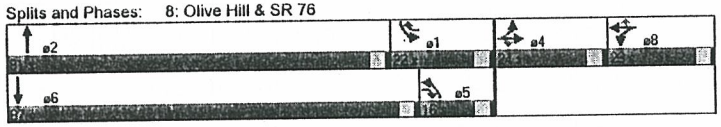
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
5/10/2005

8: Olive Hill & SR 76
Existing PM Peak

Splits and Phases: 8: Olive Hill & SR 76



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R Peaslee/V Haskell
Darnell & Associates, Inc.
Synchro 6 Report

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Free			Free			Yield			Yield	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	141	4	1	147	0	6	0	10	2	0	0
Peak Hour Factor	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Hourly flow rate (vph)	2	276	8	2	288	0	12	0	20	4	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	288			284			576	576	280	596	580	288
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	288			284			576	576	280	596	580	288
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			97	100	97	99	100	100
cM capacity (veh/h)	1274			1278			427	426	758	404	424	751

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	286	2	288	31	4
Volume Left	2	2	0	12	4
Volume Right	8	0	0	20	0
cSH	1274	1278	1700	587	404
Volume to Capacity	0.00	0.00	0.17	0.05	0.01
Queue Length 95th (ft)	0	0	0	4	1
Control Delay (s)	0.1	7.8	0.0	11.5	14.0
Lane LOS	A	A		B	B
Approach Delay (s)	0.1	0.1		11.5	14.0
Approach LOS				B	B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Free			Free			Yield			Yield	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	35	7	5	40	2	1	0	6	0	0	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	0	42	8	6	48	2	1	0	7	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	51			51			107	109	46	115	112	49
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	51			51			107	109	46	115	112	49
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	100
cM capacity (veh/h)	1556			1556			870	778	1023	853	775	1019

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	51	6	51	8	0
Volume Left	0	6	0	1	0
Volume Right	8	0	2	7	0
cSH	1556	1556	1700	998	1700
Volume to Capacity	0.00	0.00	0.03	0.01	0.00
Queue Length 95th (ft)	0	0	0	1	0
Control Delay (s)	0.0	7.3	0.0	8.6	0.0
Lane LOS		A		A	A
Approach Delay (s)	0.0	0.8		8.6	0.0
Approach LOS				A	A

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	14.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Volume (veh/h)	137	0	2	133	6	2
Peak Hour Factor	0.53	0.53	0.53	0.53	0.53	0.53
Hourly flow rate (vph)	258	0	4	251	11	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			258		517	258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			258		517	258
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1306		517	780

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	258	255	15
Volume Left	0	4	11
Volume Right	0	0	4
cSH	1700	1306	565
Volume to Capacity	0.15	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.1	11.6
Lane LOS		A	B
Approach Delay (s)	0.0	0.1	11.6
Approach LOS			B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Volume (veh/h)	48	2	0	36	0	4
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	56	2	0	42	0	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			58		99	57
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			58		99	57
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1546		900	1009

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	58	42	5
Volume Left	0	0	0
Volume Right	2	0	5
cSH	1700	1546	1009
Volume to Capacity	0.03	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	64	6	50	14	9	18	36	49	8	5	239	114
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	93	9	72	20	13	26	52	71	12	7	346	165
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	625	630	256	373	707	77	512			83		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	625	630	256	373	707	77	512			83		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	72	98	90	96	96	97	95			100		
cM capacity (veh/h)	334	375	743	475	339	969	1050			1513		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	101	72	33	26	52	83	7	231	281
Volume Left	93	0	20	0	52	0	7	0	0
Volume Right	0	72	0	26	0	12	0	0	165
cSH	337	743	410	969	1050	1700	1513	1700	1700
Volume to Capacity	0.30	0.10	0.08	0.03	0.05	0.05	0.00	0.14	0.17
Queue Length 95th (ft)	31	8	7	2	4	0	0	0	0
Control Delay (s)	20.2	10.4	14.5	8.8	8.6	0.0	7.4	0.0	0.0
Lane LOS	C	B	B	A	A		A		
Approach Delay (s)	16.1		12.0		3.3		0.1		
Approach LOS	C		B						

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	30	5	31	28	7	11	28	153	29	21	90	33
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	38	6	40	36	9	14	36	196	37	27	115	42
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	463	496	79	401	498	215	158			233		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	463	496	79	401	498	215	158			233		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	99	96	93	98	98	97			98		
cM capacity (veh/h)	451	453	966	489	451	790	1420			1331		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	45	40	45	14	36	233	27	77	81
Volume Left	38	0	36	0	36	0	27	0	0
Volume Right	0	40	0	14	0	37	0	0	42
cSH	451	966	481	790	1420	1700	1331	1700	1700
Volume to Capacity	0.10	0.04	0.09	0.02	0.03	0.14	0.02	0.05	0.05
Queue Length 95th (ft)	8	3	8	1	2	0	2	0	0
Control Delay (s)	13.9	8.9	13.3	9.6	7.6	0.0	7.8	0.0	0.0
Lane LOS	B	A	B	A	A		A		
Approach Delay (s)	11.5		12.4		1.0		1.1		
Approach LOS	B		B						

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑						↰↑	↱
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	108	195	8	89	0	0	0	0	61	1	7
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	121	219	9	100	0	0	0	0	69	1	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	100			340			248	239	121	239	458	100
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	100			340			248	239	121	239	458	100
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	90	100	99
cM capacity (veh/h)	1493			1219			695	657	930	711	495	956

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	121	219	9	100	70	8
Volume Left	0	0	9	0	69	0
Volume Right	0	219	0	0	0	8
cSH	1700	1700	1219	1700	706	956
Volume to Capacity	0.07	0.13	0.01	0.06	0.10	0.01
Queue Length 95th (ft)	0	0	1	0	8	1
Control Delay (s)	0.0	0.0	8.0	0.0	10.7	8.8
Lane LOS			A		B	A
Approach Delay (s)	0.0		0.7		10.5	
Approach LOS					B	

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑					↰		↱
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	72	107	8	243	0	0	0	0	75	0	23
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	77	114	9	259	0	0	0	0	80	0	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	259			190			377	352	77	352	466	259
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	259			190			377	352	77	352	466	259
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	87	100	97
cM capacity (veh/h)	1306			1383			560	569	984	600	491	780

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	77	114	9	259	80	24
Volume Left	0	0	9	0	80	0
Volume Right	0	114	0	0	0	24
cSH	1700	1700	1383	1700	600	780
Volume to Capacity	0.05	0.07	0.01	0.15	0.13	0.03
Queue Length 95th (ft)	0	0	0	0	11	2
Control Delay (s)	0.0	0.0	7.6	0.0	11.9	9.8
Lane LOS			A		B	A
Approach Delay (s)	0.0		0.2		11.4	
Approach LOS					B	

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	23.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↑	↱	↰		↱			
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	146	7	0	48	46	57	0	4	0	0	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	166	8	0	55	52	65	0	5	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	55			166			220	220	166	225	220	55
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	55			166			220	220	166	225	220	55
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			91	100	99	100	100	100
cM capacity (veh/h)	1551			1412			736	678	878	727	678	1012

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	166	8	55	52	65	5
Volume Left	0	0	0	0	65	0
Volume Right	0	8	0	52	0	5
cSH	1700	1700	1700	1700	736	878
Volume to Capacity	0.10	0.00	0.03	0.03	0.09	0.01
Queue Length 95th (ft)	0	0	0	0	7	0
Control Delay (s)	0.0	0.0	0.0	0.0	10.4	9.1
Lane LOS					B	A
Approach Delay (s)	0.0		0.0		10.3	
Approach LOS					B	

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	17.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↑	↱	↰		↱			
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	113	29	0	132	152	129	0	22	0	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	120	31	0	140	162	137	0	23	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	140			120			261	261	120	284	261	140
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	140			120			261	261	120	284	261	140
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			80	100	97	100	100	100
cM capacity (veh/h)	1443			1467			692	644	931	651	644	908

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	120	31	140	162	137	23
Volume Left	0	0	0	0	137	0
Volume Right	0	31	0	162	0	23
cSH	1700	1700	1700	1700	692	931
Volume to Capacity	0.07	0.02	0.08	0.10	0.20	0.03
Queue Length 95th (ft)	0	0	0	0	18	2
Control Delay (s)	0.0	0.0	0.0	0.0	11.5	9.0
Lane LOS					B	A
Approach Delay (s)	0.0		0.0		11.1	
Approach LOS					B	

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX C

- Existing + Project Conditions Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.997			0.991	
Flt Protected		0.982			0.981		0.950			0.950		
Satd. Flow (prot)	0	1829	1583	0	1827	1583	1770	1857	0	1770	1846	0
Flt Permitted		0.982			0.981		0.950			0.950		
Satd. Flow (perm)	0	1829	1583	0	1827	1583	1770	1857	0	1770	1846	0
Satd. Flow (RTOR)			198			138		1			3	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	31	54	184	55	85	128	139	943	17	57	802	54
Adj. Flow (vph)	33	58	198	59	91	138	149	1014	18	61	862	58
Lane Group Flow (vph)	0	91	198	0	150	138	149	1032	0	61	920	0
Turn Type	Split		Perm	Split		Perm	Prot			Prot		
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases			4			8						
Total Split (s)	22.0	22.0	22.0	23.0	23.0	23.0	22.0	59.0	0.0	16.0	53.0	0.0
Act Effct Green (s)		11.6	11.6		15.4	15.4	18.0	64.9		12.0	58.9	
Actuated g/C Ratio		0.10	0.10		0.13	0.13	0.15	0.54		0.10	0.49	
v/c Ratio		0.51	0.60		0.64	0.43	0.56	1.03		0.34	1.01	
Control Delay		54.0	11.0		55.0	10.2	56.3	64.1		56.3	64.7	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		54.0	11.0		55.0	10.2	56.3	64.1		56.3	64.7	
LOS		D	B		D	B	E	E		E	E	
Approach Delay		24.5			33.5			63.1			64.2	
Approach LOS		C			C			E			E	
Queue Length 50th (ft)		68	0		112	0	108	~851		45	~713	
Queue Length 95th (ft)		119	69		173	56	179	#1239		90	#1129	
Internal Link Dist (ft)		626			1268			1819			724	
Turn Bay Length (ft)												
Base Capacity (vph)		274	406		295	372	266	1005		177	908	
Starvation Cap Reductn		0	0		0	0	0	0		0	0	
Spillback Cap Reductn		0	0		0	0	0	0		0	0	
Storage Cap Reductn		0	0		0	0	0	0		0	0	
Reduced v/c Ratio		0.33	0.49		0.51	0.37	0.56	1.03		0.34	1.01	

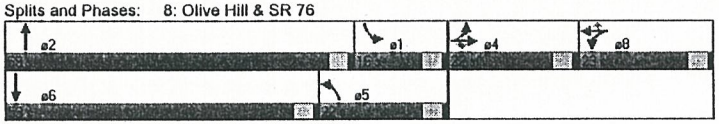
Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 56.3 Intersection LOS: E
Intersection Capacity Utilization 78.2% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
5/10/2005

8: Olive Hill & SR 76
Existing + West Lilac AM Peak

Splits and Phases: 8: Olive Hill & SR 76



Y:\041209 - Bonsall & Fallbrook Cumulative Rpt (STD)\Analysis\Synchro-05-10-05\Bonsall E+W Lilac AM.sy7
R Peaslee/V Haskell
Darnell & Associates, Inc.
Synchro 6 Report

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.997			0.994	
Flt Protected		0.970			0.978		0.950			0.950		
Satd. Flow (prot)	0	1807	1583	0	1822	1583	1770	1857	0	1770	1852	0
Flt Permitted		0.970			0.978		0.950			0.950		
Satd. Flow (perm)	0	1807	1583	0	1822	1583	1770	1857	0	1770	1852	0
Satd. Flow (RTOR)			90			167		1			2	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Volume (vph)	80	49	87	60	71	253	58	961	19	135	806	32
Adj. Flow (vph)	82	51	90	62	73	261	60	991	20	139	831	33
Lane Group Flow (vph)	0	133	90	0	135	261	60	1011	0	139	864	0
Turn Type	Split		pm+ov	Split		pm+ov	Prot			Prot		
Protected Phases	4	4	5	8	8	1	5	2		1	6	
Permitted Phases			4			8						
Total Split (s)	24.0	24.0	16.0	23.0	23.0	22.0	16.0	81.0	0.0	22.0	87.0	0.0
Act Effct Green (s)		16.1	32.1		16.0	34.0	12.0	83.9		18.0	89.9	
Actuated g/C Ratio		0.11	0.21		0.11	0.23	0.08	0.56		0.12	0.60	
v/c Ratio		0.69	0.22		0.69	0.53	0.42	0.97		0.66	0.78	
Control Delay		72.8	9.6		74.5	15.5	75.4	54.9		67.8	22.7	
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay		72.8	9.6		74.5	15.5	75.4	54.9		67.8	22.7	
LOS		E	A		E	B	E	D		E	C	
Approach Delay		47.3			35.6			56.0			28.9	
Approach LOS		D			D			E			C	
Queue Length 50th (ft)		127	0		129	59	57	943		132	294	
Queue Length 95th (ft)		197	46		202	122	108	#1350		m206	924	
Internal Link Dist (ft)		626			1268			1819			724	
Turn Bay Length (ft)												
Base Capacity (vph)		241	410		232	488	142	1039		212	1110	
Starvation Cap Reductn		0	0		0	0	0	0		0	0	
Spillback Cap Reductn		0	0		0	0	0	0		0	0	
Storage Cap Reductn		0	0		0	0	0	0		0	0	
Reduced v/c Ratio		0.55	0.22		0.58	0.53	0.42	0.97		0.66	0.78	

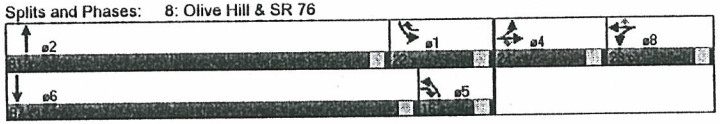
Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 85 (57%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 42.2 Intersection LOS: D
Intersection Capacity Utilization 84.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings
5/10/2005

8: Olive Hill & SR 76
Existing + W Lilac PM Peak

Splits and Phases: 8: Olive Hill & SR 76



Y:\041209 - Bonsall & Fallbrook Cumulative Rpt (STD)\Analysis\Synchro-05-10-05\Bonsall E+W Lilac PM.sy7
R Peaslee/V Haskell
Darnell & Associates, Inc.
Synchro 6 Report

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Yield			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	1	142	5	3	150	0	9	0	14	2	0	0
Peak Hour Factor	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51
Hourly flow rate (vph)	2	278	10	6	294	0	18	0	27	4	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	294			288			593	593	283	621	598	294
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	294			288			593	593	283	621	598	294
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			96	100	96	99	100	100
cM capacity (veh/h)	1267			1274			415	416	756	384	413	745

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	290	6	294	45	4
Volume Left	2	6	0	18	4
Volume Right	10	0	0	27	0
cSH	1267	1274	1700	572	384
Volume to Capacity	0.00	0.00	0.17	0.08	0.01
Queue Length 95th (ft)	0	0	0	6	1
Control Delay (s)	0.1	7.8	0.0	11.8	14.5
Lane LOS	A	A		B	B
Approach Delay (s)	0.1	0.2		11.8	14.5
Approach LOS				B	B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↰	↔			↔			↔	
Sign Control		Free			Free			Yield			Yield	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	38	11	10	41	2	3	0	8	0	0	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	0	46	13	12	49	2	4	0	10	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	52			59			126	128	52	137	134	51
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	52			59			126	128	52	137	134	51
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	99	100	100	100
cM capacity (veh/h)	1554			1545			843	756	1015	821	751	1018

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total	59	12	52	13	0
Volume Left	0	12	0	4	0
Volume Right	13	0	2	10	0
cSH	1554	1545	1700	962	1700
Volume to Capacity	0.00	0.01	0.03	0.01	0.00
Queue Length 95th (ft)	0	1	0	1	0
Control Delay (s)	0.0	7.3	0.0	8.8	0.0
Lane LOS		A		A	A
Approach Delay (s)	0.0	1.4		8.8	0.0
Approach LOS				A	A

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	17.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Volume (veh/h)	141	1	6	135	9	11
Peak Hour Factor	0.53	0.53	0.53	0.53	0.53	0.53
Hourly flow rate (vph)	266	2	11	255	17	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			268		544	267
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			268		544	267
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		97	97
cM capacity (veh/h)			1296		495	772

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	268	266	38
Volume Left	0	11	17
Volume Right	2	0	21
cSH	1700	1296	617
Volume to Capacity	0.16	0.01	0.06
Queue Length 95th (ft)	0	1	5
Control Delay (s)	0.0	0.4	11.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.4	11.2
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Volume (veh/h)	50	5	12	41	1	9
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	58	6	14	48	1	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			64		137	61
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			64		137	61
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	99
cM capacity (veh/h)			1538		849	1004

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	64	62	12
Volume Left	0	14	1
Volume Right	6	0	10
cSH	1700	1538	986
Volume to Capacity	0.04	0.01	0.01
Queue Length 95th (ft)	0	1	1
Control Delay (s)	0.0	1.7	8.7
Lane LOS		A	A
Approach Delay (s)	0.0	1.7	8.7
Approach LOS			A

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	19.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	67	6	60	14	9	18	40	49	8	5	239	116
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	97	9	87	20	13	26	58	71	12	7	346	168
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	638	643	257	385	722	77	514			83		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	638	643	257	385	722	77	514			83		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	70	98	88	96	96	97	94			100		
cM capacity (veh/h)	325	367	742	453	330	969	1047			1513		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	106	87	33	26	58	83	7	231	284
Volume Left	97	0	20	0	58	0	7	0	0
Volume Right	0	87	0	26	0	12	0	0	168
cSH	328	742	396	969	1047	1700	1513	1700	1700
Volume to Capacity	0.32	0.12	0.08	0.03	0.06	0.05	0.00	0.14	0.17
Queue Length 95th (ft)	34	10	7	2	4	0	0	0	0
Control Delay (s)	21.1	10.5	14.9	8.8	8.6	0.0	7.4	0.0	0.0
Lane LOS	C	B	B	A	A		A		
Approach Delay (s)	16.3		12.2		3.6		0.1		
Approach LOS	C		B						

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	32	5	36	28	7	11	41	153	29	21	90	37
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	41	6	46	36	9	14	53	196	37	27	115	47
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	499	531	81	435	537	215	163			233		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	499	531	81	435	537	215	163			233		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	98	95	92	98	98	96			98		
cM capacity (veh/h)	420	427	962	455	424	790	1413			1331		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	47	46	45	14	53	233	27	77	86
Volume Left	41	0	36	0	53	0	27	0	0
Volume Right	0	46	0	14	0	37	0	0	47
cSH	421	962	448	790	1413	1700	1331	1700	1700
Volume to Capacity	0.11	0.05	0.10	0.02	0.04	0.14	0.02	0.05	0.05
Queue Length 95th (ft)	9	4	8	1	3	0	2	0	0
Control Delay (s)	14.6	8.9	13.9	9.6	7.6	0.0	7.8	0.0	0.0
Lane LOS	B	A	B	A	A		A		
Approach Delay (s)	11.8		12.9		1.4		1.1		
Approach LOS	B		B						

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	31.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	113	200	8	93	0	0	0	0	61	1	7
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	127	225	9	104	0	0	0	0	69	1	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	104			352			258	249	127	249	474	104
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	104			352			258	249	127	249	474	104
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	90	100	99
cM capacity (veh/h)	1487			1207			684	648	923	700	485	950

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	127	225	9	104	70	8
Volume Left	0	0	9	0	69	0
Volume Right	0	225	0	0	0	8
cSH	1700	1700	1207	1700	695	950
Volume to Capacity	0.07	0.13	0.01	0.06	0.10	0.01
Queue Length 95th (ft)	0	0	1	0	8	1
Control Delay (s)	0.0	0.0	8.0	0.0	10.8	8.8
Lane LOS			A		B	A
Approach Delay (s)	0.0		0.6		10.6	
Approach LOS					B	

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	29.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱	↰	↑					↰		↱
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	74	110	8	255	0	0	0	0	75	0	24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	79	117	9	271	0	0	0	0	80	0	26
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	271			196			393	367	79	367	484	271
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	271			196			393	367	79	367	484	271
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			100	100	100	86	100	97
cM capacity (veh/h)	1292			1377			545	558	982	586	480	767

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	79	117	9	271	80	26
Volume Left	0	0	9	0	80	0
Volume Right	0	117	0	0	0	26
cSH	1700	1700	1377	1700	586	767
Volume to Capacity	0.05	0.07	0.01	0.16	0.14	0.03
Queue Length 95th (ft)	0	0	0	0	12	3
Control Delay (s)	0.0	0.0	7.6	0.0	12.1	9.9
Lane LOS			A		B	A
Approach Delay (s)	0.0		0.2		11.6	
Approach LOS					B	

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	24.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↑	↱	↰		↱			
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	150	8	0	50	46	59	0	4	0	0	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	170	9	0	57	52	67	0	5	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	57			170			227	227	170	232	227	57
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	57			170			227	227	170	232	227	57
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			91	100	99	100	100	100
cM capacity (veh/h)	1548			1407			728	672	873	719	672	1010

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	170	9	57	52	67	5
Volume Left	0	0	0	0	67	0
Volume Right	0	9	0	52	0	5
cSH	1700	1700	1700	1700	728	873
Volume to Capacity	0.10	0.01	0.03	0.03	0.09	0.01
Queue Length 95th (ft)	0	0	0	0	8	0
Control Delay (s)	0.0	0.0	0.0	0.0	10.4	9.1
Lane LOS					B	A
Approach Delay (s)	0.0		0.0		10.4	
Approach LOS					B	

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	17.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↱		↑	↱	↰		↱			
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	115	29	0	137	152	135	0	22	0	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	122	31	0	146	162	144	0	23	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	146			122			268	268	122	291	268	146
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	146			122			268	268	122	291	268	146
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			79	100	97	100	100	100
cM capacity (veh/h)	1436			1465			685	638	929	644	638	901

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2
Volume Total	122	31	146	162	144	23
Volume Left	0	0	0	0	144	0
Volume Right	0	31	0	162	0	23
cSH	1700	1700	1700	1700	685	929
Volume to Capacity	0.07	0.02	0.09	0.10	0.21	0.03
Queue Length 95th (ft)	0	0	0	0	20	2
Control Delay (s)	0.0	0.0	0.0	0.0	11.7	9.0
Lane LOS					B	A
Approach Delay (s)	0.0		0.0		11.3	
Approach LOS					B	

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX D

- Speed Survey for West Lilac Road at Via Ararat Drive
- Preliminary Grading Plans for Via Ararat Drive
- Preliminary Grading Plans for Aqueduct Road

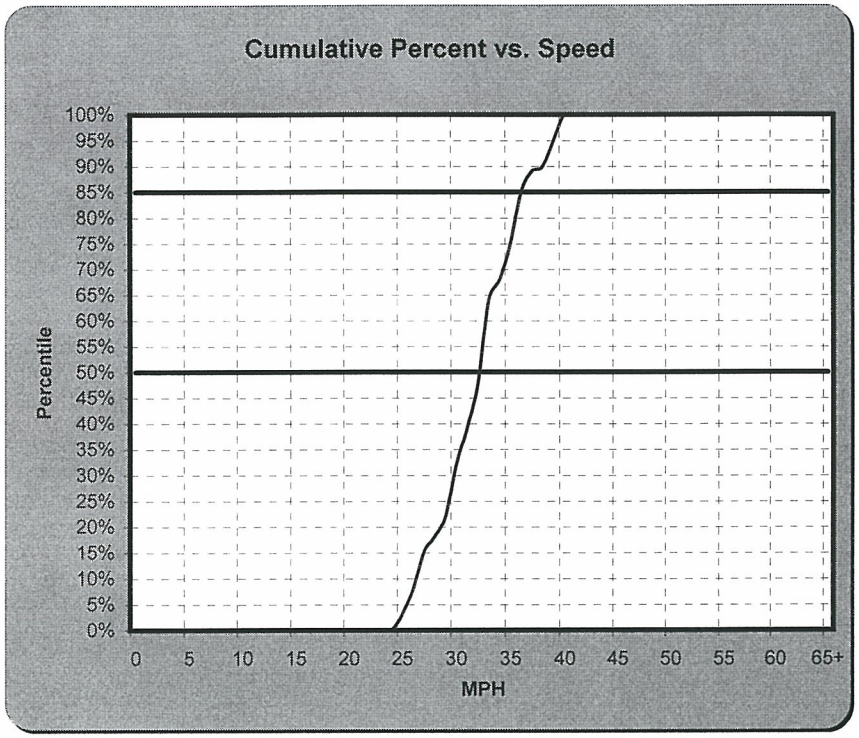
- Speed Survey for West Lilac Road at Via Ararat Drive

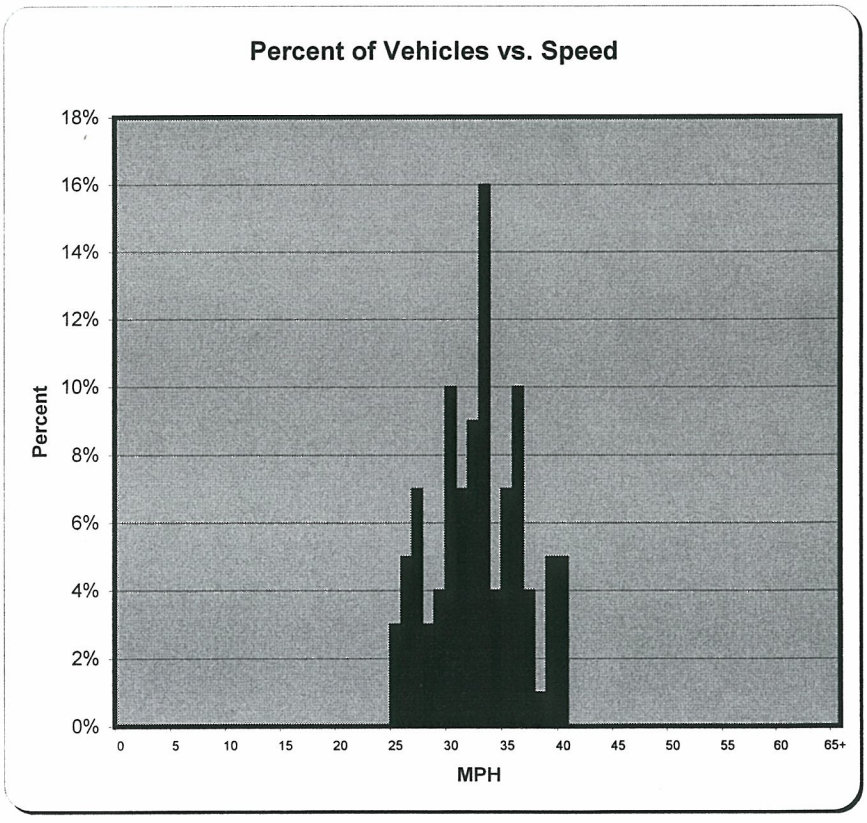
West Lilac Farms

East of Via Ararat

Date of Count:	8/10/2005	50th Percentile Speed:	33 mph	10 MPH Pace:	27 - 36 mph
Beginning Time:	10:00 AM - 4:00 PM	85th Percentile Speed:	36 mph	Percent Within Pace:	77.0%
Direction Counted:	Westbound	Average Speed:	32.5 mph	Percent Over Pace Speed:	15.0%
Posted Speed Limit:	N/A	Range of Speeds Observed:	25 - 40 mph	Percent Under Pace Speed:	8.0%
Observer:	Vonessa Centracchio	Number of Vehicles Observed:	100		

MPH	Number of Vehicles	Percent of Count	Cumulative Percent of Count
0	0	0.0%	0.0%
1	0	0.0%	0.0%
2	0	0.0%	0.0%
3	0	0.0%	0.0%
4	0	0.0%	0.0%
5	0	0.0%	0.0%
6	0	0.0%	0.0%
7	0	0.0%	0.0%
8	0	0.0%	0.0%
9	0	0.0%	0.0%
10	0	0.0%	0.0%
11	0	0.0%	0.0%
12	0	0.0%	0.0%
13	0	0.0%	0.0%
14	0	0.0%	0.0%
15	0	0.0%	0.0%
16	0	0.0%	0.0%
17	0	0.0%	0.0%
18	0	0.0%	0.0%
19	0	0.0%	0.0%
20	0	0.0%	0.0%
21	0	0.0%	0.0%
22	0	0.0%	0.0%
23	0	0.0%	0.0%
24	0	0.0%	0.0%
25	3	3.0%	3.0%
26	5	5.0%	8.0%
27	7	7.0%	15.0%
28	3	3.0%	18.0%
29	4	4.0%	22.0%
30	10	10.0%	32.0%
31	7	7.0%	39.0%
32	9	9.0%	48.0%
33	16	16.0%	64.0%
34	4	4.0%	68.0%
35	7	7.0%	75.0%
36	10	10.0%	85.0%
37	4	4.0%	89.0%
38	1	1.0%	90.0%
39	5	5.0%	95.0%
40	5	5.0%	100.0%
41	0	0.0%	100.0%
42	0	0.0%	100.0%
43	0	0.0%	100.0%
44	0	0.0%	100.0%
45	0	0.0%	100.0%
46	0	0.0%	100.0%
47	0	0.0%	100.0%
48	0	0.0%	100.0%
49	0	0.0%	100.0%
50	0	0.0%	100.0%
51	0	0.0%	100.0%
52	0	0.0%	100.0%
53	0	0.0%	100.0%
54	0	0.0%	100.0%
55	0	0.0%	100.0%
56	0	0.0%	100.0%
57	0	0.0%	100.0%
58	0	0.0%	100.0%
59	0	0.0%	100.0%
60	0	0.0%	100.0%
61	0	0.0%	100.0%
62	0	0.0%	100.0%
63	0	0.0%	100.0%
64	0	0.0%	100.0%
65+	0	0.0%	100.0%

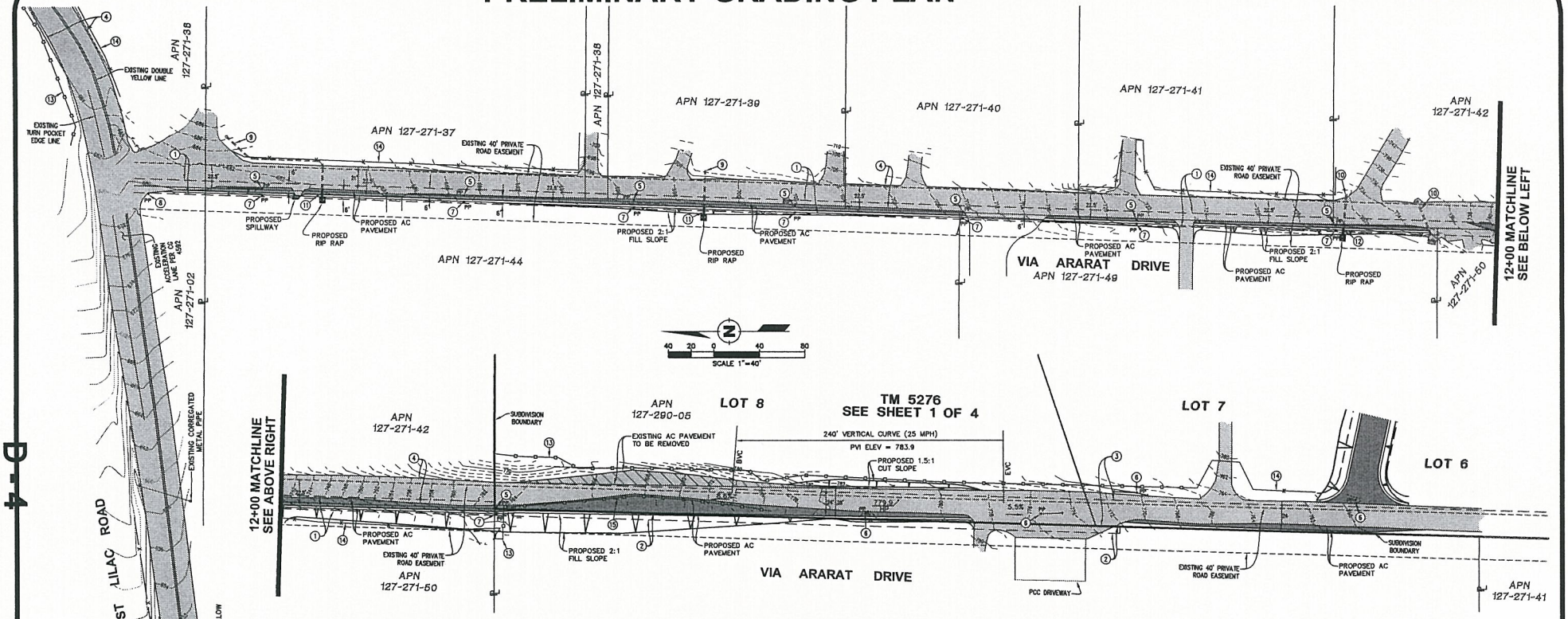




- Preliminary Grading Plans for Via Ararat Drive

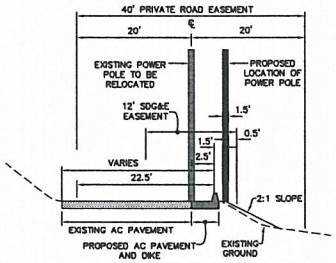
PRELIMINARY GRADING PLAN

SHEET 4 OF 4



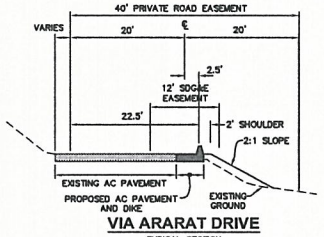
LEGEND:

1. EXISTING 12' SDG&E EASEMENT
2. EXISTING 6' SDG&E EASEMENT
3. EXISTING 23' SDG&E EASEMENT
4. EXISTNG AC PAVEMENT
5. EXISTING POWER POLE
6. EXISTING POWER POLE TO BE REMOVED AND UTILITY LINES TO BE UNDERGROUNDED
7. PROPOSED LOCATION OF POWER POLE
8. EXISTING POWER POLE TO REMAIN
9. EXISTING 12" HDPE TO REMAIN
10. EXISTING 12" RCP TO REMAIN
11. PROPOSED 6'~12" HDPE AT 1% MIN.
12. PROPOSED 6'~12" RCP AT 1% MIN.
13. EXISTING WOOD FENCE TO REMAIN
14. EXISTING CHAINLINK FENCE TO REMAIN
15. EXISTING WOOD FENCE TO BE RELOCATED TO NEW EDGE OF PAVEMENT



VIA ARARAT DRIVE

TYPICAL SECTION
AT THE EIGHT OFFSITE POWER POLE LOCATIONS
NO SCALE



VIA ARARAT DRIVE

TYPICAL SECTION
IN BETWEEN POWER POLES
NO SCALE

NOTE:
THE EXISTING CROSS SLOPE VARIES BETWEEN A NORMAL CROWN AND A CONTINUOUS SLOPE TO ONE SIDE OR THE OTHER ALONG THE ENTIRE LENGTH OF THE ROAD. IN ORDER NOT TO DIVERT DRAINAGE, THE EXISTING CROSS SLOPE WILL BE MAINTAINED IN AREAS WHERE WIDENING IS PROPOSED.

OWNER/SUBDIVIDER:
JAMES D. PARDEE, JR.
WEST LILAC FARMS II, LLC
207 STONECREEK COURT
WESTLAKE VILLAGE, CA 91361
1-805-373-5555

REGISTERED PROFESSIONAL ENGINEER
LAWRENCE W. WALSH
46316
EXP. 12-31-06
CIVIL
STATE OF CALIFORNIA

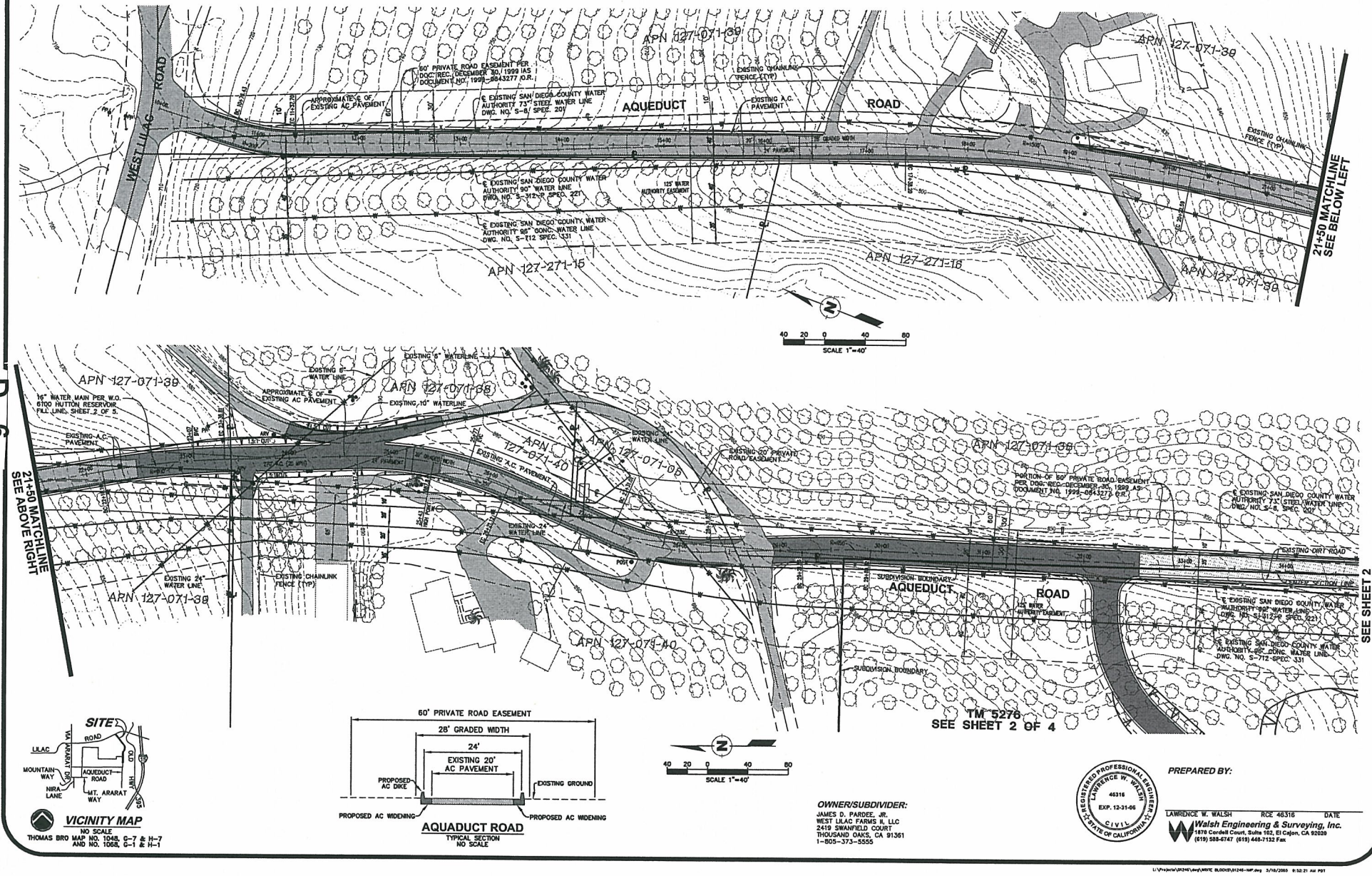
PREPARED BY:

LAWRENCE W. WALSH RCE 46316 DATE

Walsh Engineering & Surveying, Inc.
1979 Cordell Court, Suite 102, El Cajon, CA 92020
(619) 588-6747 (619) 448-7132 Fax

- Preliminary Grading Plans for Aqueduct Road

PRELIMINARY GRADING PLAN



D - 6

SITE

VICINITY MAP
NO SCALE
THOMAS BRO MAP NO. 1048, G-7 & H-7 AND NO. 1068, G-1 & H-1

AQUADUCT ROAD
TYPICAL SECTION
NO SCALE

OWNER/SUBDIVIDER:
JAMES D. PARDEE, JR.
WEST LILAC FARMS II, LLC
2419 SWANFIELD COURT
THOUSAND OAKS, CA 91361
1-805-373-5555

REGISTERED PROFESSIONAL ENGINEER
LAWRENCE W. WALSH
46316
EXP. 12-31-06
CIVIL
STATE OF CALIFORNIA

PREPARED BY:

LAWRENCE W. WALSH RCE 46316 DATE

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APPENDIX E

- Responses to County Comments

Darnell & ASSOCIATES, INC.
TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

MEMORANDUM

DATE: May 11, 2005

TO: Jim Pardee, West Lilac Farms, LLC

FROM: Vicki S. Haskell, P.E. VSH

D&A Ref. No: 030411
RE: West Lilac Residential Subdivision (TM 5276) – Responses to County's April 13, 2005 Comments on our January 11, 2005 Traffic Study

Darnell & Associates, Inc. has reviewed the County of San Diego's April 13, 2005 Comments on our January 11, 2005 Traffic Study for the West Lilac Road (TM 5276) project. The following summarizes our responses to each of the County's comments. These responses have been incorporated into our latest iteration of the traffic study.

Comment 1: Please revise and address the revised TM traffic access roads and distribute trip generations appropriately. It is noted that Attachment C, trip generations report and Figure 2 now outdated and in need of revision to correspond with T.M. 5276RPL3 DPLU received 2/3/05. Address traffic impacts and mitigations on all project impacted access roads including Via Urner, Aqueduct Road, Via Ararat, and any other roads identified to be used by project generated traffic. Please describe existing conditions (including the overhead utility pole line adjoining the Via Ararat traveled way; and sight distance issues at private to public road access such as W. Lilac Road at Via Ararat), impacts, and mitigations and required improvements of all such impacted roads.

Response 1: Since the Board of Supervisors adopted the Traffic Impact Fee (TIF) ordinance on April 13, 2005, payment of the appropriate TIF fees will mitigate any of the project's cumulative impacts. Therefore, the traffic study has been completely reformatted such that it now focuses on the project's direct impacts rather than cumulative impacts. Also the revised study incorporated our trip generation report from Attachment C into the main body of the text, thus there is no longer a separate report to discuss the project's trip generation. The revised traffic study includes the updated site plan and a description of Via Urner Way, Aqueduct Road, and Via Ararat Drive.

Comment 2: The traffic study state (Pg. 7) that the project will not have any direct impacts because the project does not add more than 100 trips to any roadway segment. The traffic study should better document why the project would not have any significant direct impact to the SR-76/Olive Hill Road intersection. The project adds 11 peak hour trips (Table 4) to the SR-76/Olive Hill Road intersection, which currently operates at LOS E/F. The traffic study should document that the project will not add five or more peak hour trips to the critical move.

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E-mail: BD492@aol.com

Response 2: The revised traffic study includes a level of service analysis for existing plus project conditions to document that the proposed project does not have any significant direct impacts. The project adds a total of 11 two-way peak hour trips to the SR-76/Olive Hill Road intersection during the PM peak hour; however, it does not add more than 5 peak hour trips to the critical movement and it does not result in an increase of delay of more than two (2) seconds, therefore, the project does not have a direct impact at this intersection.

Comment 3: The County Board of Supervisors is scheduled to consider a Transportation Impact (TIF) program on April 13, 2005. There is no guarantee that the Board of Supervisors will approve the TIF program. With or without the TIF program, the project will be required to mitigate its cumulative impacts. The mitigation measures could consist of fair-share contributions to official improvement projects and/or physical/spot road/intersection improvements that are proportional to the project's cumulative traffic impacts.

Response 3: The Board of Supervisors adopted the Traffic Impact Fee (TIF) ordinance on April 13, 2005, thus payment of the appropriate TIF fees will mitigate any of the project's cumulative impacts.

Comment 4: TM 5276 is located in the Bonsall community; the traffic study proposes to mitigate the project's cumulative impact to segments of Mission Road located in the Fallbrook community by paying the impact fee. The acceptability of this inter-community TIF distribution may also need further resolution.

Response 4: The TIF program adopted by the Board of Supervisors includes a regional and local component. Therefore, the TIF fees will mitigate the cumulative impacts in Bonsall as well as Fallbrook.

Comment 5: The TIA has identified cumulative traffic impact to Mission Road and SR-76. Although fair-share contributions are recommended to mitigate the cumulative impacts, the County does not have a current CIP project for all of these road segments. It should be noted that mitigation of the project's cumulative impacts may be difficult, if the project proceeds prior to the adoption of the TIF program.

Response 5: See response to comment 3.

Comment 6: The project applicant/consultant should coordinate with County staff regarding the suitability of the project's proposed mitigation.

Response 6: So noted.

Darnell & ASSOCIATES, INC.
TRANSPORTATION PLANNING & TRAFFIC ENGINEERING

MEMORANDUM

DATE: October 19, 2005

TO: Jim Pardee, West Lilac Farms, LLC
Larry Walsh, Walsh Engineering & Surveying, Inc.

FROM: Vicki S. Haskell, P.E. VSH

D&A Ref. No: 030411

RE: West Lilac Residential Subdivision (TM 5276) – Responses to County's October 5, 2005 Comments on our May 11, 2005 Traffic Study

Darnell & Associates, Inc. (D&A) has reviewed the County of San Diego's October 5, 2005 comments on our May 11, 2005 Traffic Study for the West Lilac Road (TM 5276) project. The following summarizes our responses to the County's comments. These responses have been incorporated into our report dated October 19, 2005.

Minor Comment C: DPLU and the Department of Public Works (DPW) staff have reviewed the revised Traffic Study submitted on May 25, 2005. The report itself is acceptable provided that the disposition of the exception request submitted for Via Ararat Drive is addressed in the final CEQA file versions of the Traffic Study.

Response: The traffic study has been revised to reference the proposed design exception for Via Ararat Drive to reduce the pavement width to 22.5 feet. Please see Section V our October 19, 2005 report.

Please fee free to contact the office should you have any questions.

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